

Public Utilities

FORTNIGHTLY



October 8, 1936

WHAT WILL THE FEDERAL POWER PROGRAM
EVENTUALLY COST?

By Henry Earle Riggs

New Acres and Power

By William E. Warne

Municipal Electric Plants and Unemployment

By George E. Doying

The Investor Looks at TVA

By Ernest R. Abrams

Utility Addresses before the American

Bar Association—APPENDIX 1 78

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to help you
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in

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Dollar-minded executives in many companies have been able to take a big slice off truck tire bills this year. They have cut costs on already economical operations. They have accomplished this by using a new tire and a new method of tire selection.

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But this is not the only savings you get from Goodrich. There are over a hundred types and sizes of Goodrich Pneumatic Truck Tires. Each is designed for a specific purpose. Only *one combination* will give you the economical service you should have. And Goodrich will sell you *nothing else*.

Why not make a test on your own trucks? We want to prove every claim to your satisfaction. Pass this advertisement to the man responsible for tires. Ask him to talk to the local Goodrich man. Or write us direct. Sign your name and address in the margin. Tear off and mail today.

Write, wire or 'phone

Department T-121

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Associate Editors—ELLSWORTH NICHOLS, FRANCIS X. WELCH
Contributing Editor—OWEN ELY

Public Utilities Fortnightly



VOLUME XVIII

October 8, 1936

NUMBER 8

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Q This magazine is an open forum for the free expression of opinion concerning public utility regulation and allied topics. It is not the mouthpiece of any group or faction; it is not under the editorial supervision of, nor does it bear the endorsement of, any organization or association. The editors do not assume responsibility for the opinions expressed by its contributors.

PUBLIC UTILITIES REPORTS, INC., PUBLISHERS

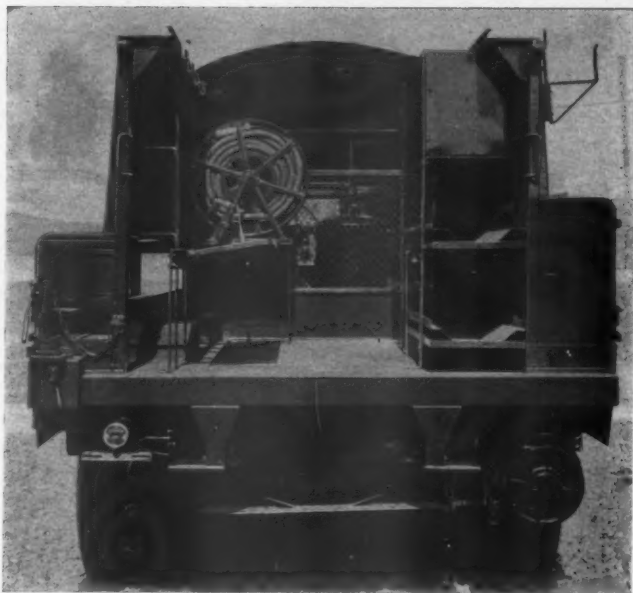
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TYPE 3246

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Pages with the Editors

IF the original cost were the only substantial matter to be considered in connection with the Federal power program, many of us would be inclined to say, "Well, let us take a chance and see what comes of it." After all, many of the dams are either completed or so far under way that to stop now would seem very wasteful. So much money already spent and our government is so far committed. As the little Jewish tourist said when he kissed the Blarney Stone, "So what could I lose?"

BUT with power dams there is upkeep as well as cost and there are other expenses not readily visible to the naked eye. Completion of the Federal power program might even resemble the conduct of the man who put a quarter through a crack in the boardwalk and then threw a dollar in after to make it "worth the bother" to rip up the planks.

It is somewhat along this line that PROFESSOR HENRY EARLE RIGGS writes the leading article in this issue (beginning on page 455). Dr. RIGGS evidently feels that there is not sufficient appreciation of the full consequences and cost of the Federal power program. If there were, something might be done about it. Dr. RIGGS does his part by telling us what he thinks the Federal plan will ultimately cost. There are probably others who doubt the desirability of this program but feel that it should be allowed to demonstrate its own defects. Well, "giving enough rope" has been known to be a satis-

factory remedy, but it does take time, and it is expensive, and, finally, it may not work.

DR. RIGGS, who should by this time be well known to FORTNIGHTLY readers, is one of the outstanding authorities on utility valuation. Born, raised, and educated in Kansas, he served from 1912 to 1932 on the engineering faculty at the University of Michigan, from which he retired with the title of *professor emeritus*. He is now engaged in consulting practice.

JUST by way of presenting at least a portion of the other side of the picture, we also present in this issue an article (beginning page 464) on the work of the Federal Bureau of Reclamation. This bureau built Boulder dam which only came into life as a public servant recently. It is also building Kennett dam in the Central valley of California, Grand Coulee, the Seminole dam of the Casper-Alcova project in Wyoming. The article is written by a member of the publicity staff of the Bureau of Reclamation, WILLIAM E. WARNE.

MR. WARNE is a Hoosier by birth, who later spent his boyhood on a ranch in the Imperial valley, the reclaimed southern California desert which Boulder dam guards. There he heard the birth cries of the great Colorado river project at round-table discussions among the farmers who were seeking a way to save



HENRY EARLE RIGGS

"Is Uncle Sam only making the down payment on his Power Program?"

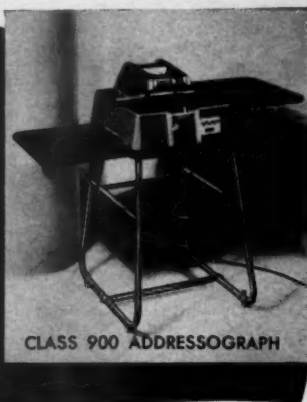
(SEE PAGE 455)



WILLIAM E. WARNE

"The Bureau of Reclamation moves into the field of mass production of kilowatts."

(SEE PAGE 464)



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corporation is judged by its annual statement . . . by the *profit* it makes. Profit accrues from more business and less expense. For over 40 years Addressograph methods have been helping to accomplish these two fundamental aims.

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themselves from the uncontrolled river. At farm bureau meetings, which he attended with his father at the country school house, the first public speeches he can recall were made by advocates of Boulder dam. Now, almost a quarter of a century later, WARNE, having graduated from the University of California and worked his way to Washington as a newspaper reporter, is employed by the builder of Boulder dam, the Bureau of Reclamation.

It was only recently that we learned definitely just what was the basis for parceling out Federal projects between the Bureau of Reclamation and the Army Engineers. It's really very simple and a bright school boy might easily have guessed it right off. If the project is one principally involving irrigation, the Bureau of Reclamation gets the order, but if it involves navigation, the job goes to the Army. Thus, while the Bureau of Reclamation is busy on the work outlined in Mr. WARNE's article, the Army Engineers are putting the finishing touches to Bonneville, and working literally like beavers on Fort Peck.

WHERE a project involves both navigation and irrigation, the "dominant element" controls. Electric power production apparently does not control the choice at all. It is an "incident"—constitutionally at least. Politically, we suppose, it is somewhat more important. When Passamaquoddy was proposed, the powers that be at Washington were stumped for a while because the Bay of Fundy is about as navigable as anyone could reasonably desire, and the rock-bound coast of Maine is already pretty well irrigated. However, somebody recalled that if we had a war, and if we ran short of power, and if we could find use for it up in Maine, Quoddy might come in pretty handy. So it was settled—a national defense project and the Army Engineers received the call. That was before the National Youth Administration took over the remains.

THE article in this issue, beginning page 473 is by our frequent contributor, GEORGE E. DOYING, managing editor of the P.U.R. Executive Information Service, who packed up his typewriter back in 1916 and left the field of Illinois journalism to shift for itself. Since coming to Washington, Mr. DOYING became associated with David Lawrence's *United States News* (formerly the *United States Daily*).

Of timely interest is Mr. DOYING's discussion of municipal plants and unemployment. With the political campaign raging at its height, the relative cost of employment in PWA and WPA, respectively, is bound to receive considerable attention from the candidates and the party orators. The issue of Leaf Raking *v.* Substantial White Elephants that has been fought out somewhat bitterly at times between the PWA and the WPA in Washington is certain to be carried to the country at large by the politicians.



GEORGE E. DOYING

"What price unemployment relief on municipal power plant projects?"

(SEE PAGE 473)

WITH this issue we introduce a new contributor (article beginning page 480) in the person of ERNEST R. ABRAMS. MR. ABRAMS was engaged in the financing of public utilities in the Middle West for about seventeen years, then devoted eight years to purchase negotiations of small operating units in various consolidation proceedings. Coming to New York at the end of 1933 he accepted the position of public utility economist for Standard Statistics Company, Inc. He resigned that office in 1935 to make special economic studies for certain large utility systems. He is at present acting in an advisory capacity for several New York investment interests.

AMONG the important decisions reprinted from *Public Utilities Reports* in the back of this number, may be found the following:

AN extensive investigation by the Missouri commission has resulted in important rulings on exclusion of nonutility property, overhead costs, financing costs, going value, depreciation, charges to operation, and other matters. (See page 1.)

THE Pennsylvania commission has considered the public utility status of a natural gas company which has solicited customers, signed contracts, and laid pipes. (See page 23.)

THE next number of this magazine will be out October 22nd.

The Editors



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REPRINTS FROM PUBLIC UTILITIES REPORTS

Various regulatory rulings by courts and commissions reported in full text, pages 1-24, from 15 P.U.R.(N.S.)

NEW SWITCHBOARDS FOR CENTRAL STATION SERVICE

Study of any new I-T-E switchboard built or building for a public utility company shows how closely modern station requirements have guided design. New air circuit breakers and controls as well as the protective structure are for central station use and are especially adapted to the particular job

To Protect Auxiliaries in a Southern Power Station

This board houses eighteen hand-operated circuit breakers in individual cells, rigidly mounted with bolted connections to bus bars, and three of the withdrawal type on pantograph mountings. Access to bus compartment is provided by a door at each end of structure.



For a Northwestern Utility's Station Auxiliaries



14 K-type circuit breakers, 13 electrically-operated, 1 hand-operated, enclosed in an I-T-E Multumite switchboard typical of modern dead-front all-steel construction.

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8 solenoid-operated air-circuit breakers mounted on pantographs with 1 truck-type circuit breaker in left-hand compartment. Relays front mounted on hinged doors. New Uniflow louvers for improved ventilation.



Complete details of I-T-E steel switchboard construction will be furnished on request either by the factory or through I-T-E engineers located near you.

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I-T-E CIRCUIT BREAKER CO., PHILADELPHIA, PA.

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Remarkable Remarks

"There never was in the world two opinions alike."

—MONTAIGNE

JOHN C. DALTON
*Manager, County of London
Electric Supply.*

"Let us at all costs keep the politicians away from this business of ours."

DR. CARLOS ANGLADE
*Ministry of Public Works
of Venezuela.*

"I advocate private ownership with central management, coupled with government check."

J. D. ROSS
*Member, Federal Securities and
Exchange Commission.*

"The residential customer, whether consciously or unconsciously, budgets his light and power bill."

K. S. WINGFIELD
PWA official.

"Commissions cannot hope to regulate corporations far more powerful than the commissions themselves."

GEORGE N. TIDD
*President, American Gas and
Electric Company.*

"Integration of power systems has been going on since the earliest days of the electrical supply industry."

MAURICE P. DAVIDSON
*Former Commissioner of New York
City Water Supply, Gas
and Electricity.*

"The general myth that the public service commission has the power to control rates is without foundation."

HARCOURT A. MORGAN
*Director, Tennessee Valley
Authority.*

"American agriculture is confronted with critical problems that widespread rural electrification promises to help solve."

HUDSON W. REED
*United Gas Improvement
Company.*

"The low net cash income per farm must be considered a definitely limiting factor in the future progress of rural electrification."

FLOYD L. CARLISLE
*Chairman of the board,
Consolidated Edison Company
of New York.*

"One of the most important unvarying economic laws is that every enterprise, whether governmental or private, must stand on its own feet."

GOSTA MALM
*Director General, Swedish Royal
Board of Waterfalls.*

"Municipal ownership and operation of gas and electric utilities is not regarded as interference with private initiative on the part of (Swedish) public authorities, and so far has not met with opposition in business circles of this country."

Burroughs

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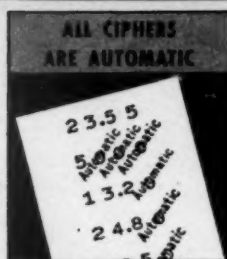


SPEED . . . with fewer motions

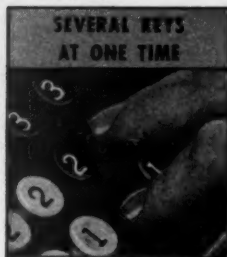
Burroughs short-cut keyboard permits the operator to add or subtract an entire amount, or take a total, with a single motion of the hand. Also, there are no ciphers to write—ciphers print automatically. These and many other time and labor saving advantages of the short-cut keyboard are described and illustrated in a new, interesting booklet. For your copy, telephone the local Burroughs office or write direct.

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Only on the short-cut keyboard can two or more keys be depressed at one time.



Only on the short-cut keyboard can an entire amount and the motor bar be depressed together.

H. BELSHAW
*Dean of Faculty of Commerce,
Aukland University.*

"An unamended Constitution may prove, not a safeguard against unwise legislation, but an explosive that widens economic and social cracks."

NORMAN R. GIBSON
*Vice President, Niagara-Hudson
Power Corporation.*

"... the necessary revenue to cover the cost of domestic electric service cannot be maintained if prices are reduced too rapidly or too much."

HAROLD L. ICKES
Secretary of the Interior.

"In point of time it is not yet too late to develop sound policies for the development and use of those physical means that are available for the creation of electric power."

CORDELL HULL
U. S. Secretary of State.

"As the uses of power are extended to millions of people throughout the world, the influence upon society of this great expansion must have the careful consideration of us all."

BERNARD P. HAIGH
*Professor, Royal Naval College
of Greenwich, England.*

"The water resources of America are tremendous, and in comparison with the power in use and the power available, I would characterize America as being still in a stage of infancy."

J. F. FOGARTY
*President, North American
Company.*

"Ample evidence exists that the sound holding company has been, and will in the future continue to be, an important contributor to the further development of the electric light and power industry."

ENAR ESKILSSON
*Member, Swedish Royal Board
of Waterfalls.*

"The (Swedish) state does not compete with private undertakings in those cases where the latter are prepared to supply power at fair prices and on conditions equivalent to those offered by the state power plants."

S. SATO
Tokio engineer.

"In Japan there is private industrial control. In some factions of the government there is a movement for government ownership of power. A combination of private industry with government interests would be, in my opinion, the best solution."

DR. HARLOW S. PERSON
*Consultant, Rural Electrification
Administration.*

"... we perceive a production equipment of a capacity far beyond any call yet put on such equipment by consumer spending, resting on power rather than human labor to a degree never before known, and concentrated in cities with attendant social problems."

C. J. GOODNOUGH
*Chairman, Pennsylvania Public
Service Commission.*

"I feel that regulation, which perhaps in many instances has not accomplished all it should, has as alternatives only public ownership, of which we have already had some examples, and competition, with its repulsive idea of duplicating facilities and its resultant waste."

New CE Unit for— Appalachian Electric Power Company

**Logan, W. Va.
Plant**

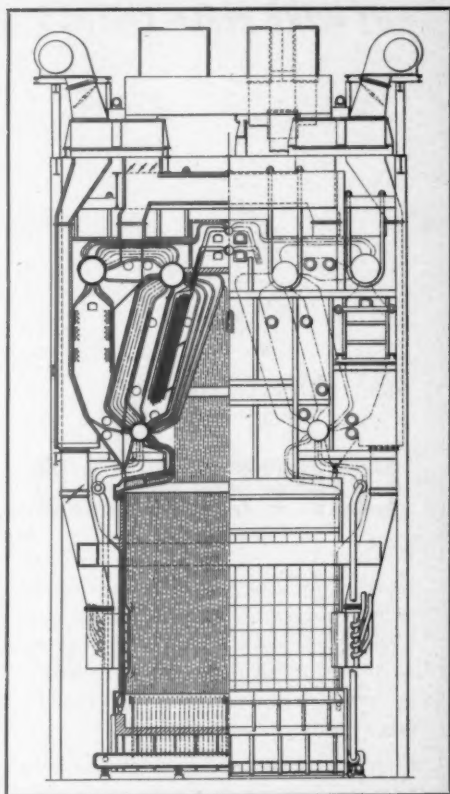
DETAILS

Operating: Capacity—1,000,000 lb. Design Pressure—1425 lb. Total Temperature—925F.

Equipment: CE multi-drum boiler, CE completely water cooled furnace with double hopper bottom and with 16 CE burners arranged for tangential firing, 2 Elesco superheaters and economizers, 2 Ljungstrom air preheaters.

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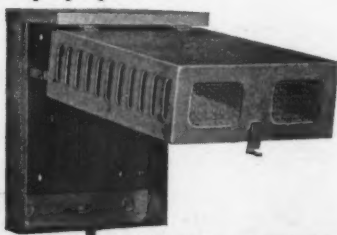
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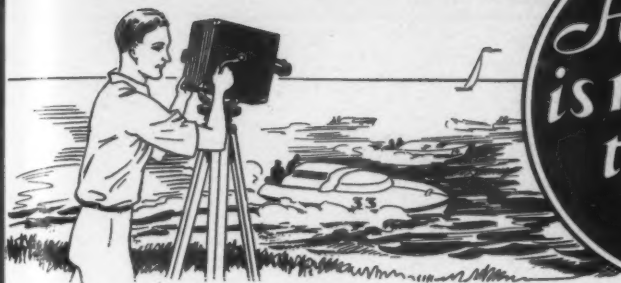
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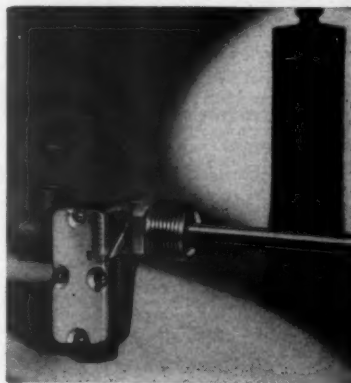
AND A WATER HEATER IS NO BETTER THAN ITS *Thermostat!*

AS THE lens is to the camera, so is the thermostat to an Automatic Water Heater. Upon its reliable action depends the success of the heaters you sell, and upon that success depends an important part of your revenue.

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“Buffalo”

Unit Heaters

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NEVER EQUALED FOR SERVICEABILITY

*For 10, 20 and Even 30
Thousand Hours Gargoyle
D.T.E. Oils retain their ability
to Lubricate Efficiently*



SOCONY-VACUUM OIL COMPANY, INC.

STANDARD OIL OF NEW YORK DIVISION - WHITE STAR DIVISION - LUBRITE
DIVISION - WHITE EAGLE DIVISION - WADHAMS OIL COMPANY - MAGNOLIA
PETROLEUM COMPANY - GENERAL PETROLEUM CORPORATION OF CALIFORNIA

RILEY PULVERIZERS in Central Stations

Plant after plant in the Public Utility industry has swung to Riley Pulverizers . . . definitely establishing Riley as one of the leaders

A few Public Utilities using Riley Pulverizers . . .

Union Electric Light & Power, Cahokia . . . Repeat Order

Edison Electric Illuminating Co., Boston . . . Repeat Order

Hartford Electric Light Co., Conn. . . . Repeat Order

Potomac Electric Power Co., Washington, D. C.

Oklahoma Gas & Electric Co. . . . Repeat Order

Stamford Gas & Electric Co., Conn.

City of Springfield, Ill.

City of Tacoma, Wash.

Savannah Electric Co., Georgia

Dubuque Electric Co., Iowa

Central Iowa Power & Light Co.

Lynn Gas & Electric Co., Mass.

Upper Michigan Power & Light Co.

RILEY STOKER CORPORATION WORCESTER, MASS.

BOSTON
ST. LOUIS

NEW YORK
CINCINNATI

PHILADELPHIA
HOUSTON

PITTSBURGH
CHICAGO

BUFFALO
ST. PAUL

CLEVELAND
KANSAS CITY

DETROIT
LOS ANGELES

TACOMA
ATLANTA

COMPLETE STEAM GENERATING UNITS

BOILERS - SUPERHEATERS - AIR HEATERS - ECONOMIZERS - WATER-COOLED FURNACES
PULVERIZERS - BURNERS - MECHANICAL STOKERS - STEEL-CLAD INSULATED SETTINGS

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INTERPRETATION

(A WORD OFTEN MISUSED)

"Interpretation" means more than just building to a plan. Interpretation, as we practice it at Grinnell, begins with an understanding of your requirements and the ability to follow intricate layouts to the letter. And, when the actual work of prefabrication comes, expert handling plays its part. Delivery on time is an important factor; for without it the others do not count.

The ability to thus interpret into piping, the ideas and plans of engineers, has earned an enviable reputation for Grinnell. A reputation often expressed in the statement, "Give the plans to Grinnell whenever piping is involved."

GRINNELL COMPANY
PROVIDENCE, R. I.
EXECUTIVE OFFICES
BRANCH OFFICES IN PRINCIPAL CITIES

ADVANTAGES OF GRINNELL PREFABRICATION

Interpretation of Ideas and Plans
Thorough Testing • Easy, Rapid Erection
Economy in Cost and Labor
Delivery on Schedule

GRINNELL

WHENEVER PIPING IS INVOLVED

ONE MAN=6

When he goes after frozen fittings with the **RIDGID** Compound-Leverage Wrench

• No tool in your shop or kit will pay for itself more quickly than a **RIDGID** Compound Leverage Pipe Wrench. For it enables one lone man to turn easily pipe or fittings that often require several men and pipe on a wrench handle to start—and it lets you salvage fittings that otherwise have to be smashed off. Easy to use—put the trunnion on pipe, jaw on fitting (or vice versa) and pump it on or off. Four sizes, S2, S4, S6 and S8 for pipe up to 8". Short handles. Ask your Jobber to show you.

THE RIDGE TOOL CO., ELYRIA, O.

RIDGID

Reg. U. S. Pat. Off.

RIDGID
PIPE TOOLS
WRENCHES
CUTTERS
THREADERS
VISES
EXTRACTORS



The **RIDGID** Wrench that answers every heavy-duty requirement—guaranteed unbreakable housing—meets U. S. Government and Navy tests.



ROYAL WINS ON WORK!

WHEN YOU "COMPARE THE WORK," the superiority of the New Easy-Writing Royal is established beyond question!

You can see its brilliant performance . . . you can measure its merits . . . you can easily do so, the very day the New Royal first enters your office.

Satisfaction and Savings

Letter-perfect performance is written into every line produced on this great Royal. Outstanding in speed and ease of operation, its years of dependable service are assured by the precise methods under which all Royals are made.

That is why more and more offices are standardizing on Royals . . . why *Royal is now enjoying the greatest sales of its entire history.*

Copyright, 1936, Royal Typewriter Company, Inc.

In your own office . . . Try the New Easy-Writing Royal.

ROYAL TYPEWRITER COMPANY, INC.
2 Park Avenue, New York City

The New Royal Portable (three models) for student and home use is also made by the world's largest company devoted exclusively to the manufacture of typewriters.

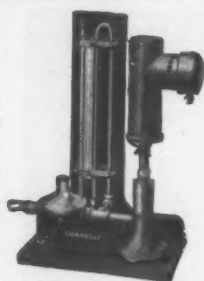
Check These FIRSTS That Make Royal FIRST

First in **SPEED** . . . Greater Volume!
First in **EASE** . . . With Touch Control,* Shift Freedom, Finger Comfort Keys.
First in **CAPACITY** . . . Better typing faster! First in **ECONOMY** . . . Lower typing costs throughout. First in **DURABILITY** . . . These New Royals can take it! Day in, day out!

*Trade-mark for key-tension device.

ROYAL WORLD'S NUMBER 1 TYPEWRITER

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CONNELLY CALOROPTIC BTU - INDICATOR



Simple Accurate Convenient

A direct reading BTU Indicator. No corrections or calculations are required after calibration. No lag in reading. May be used on any kind of gas. Especially valuable on Mixed Gas.

Illustration shows Caloroptic fitted with photronic cell for use with Connelly Distant Signal Unit which indicates direction and amount of any change. When the set limits are exceeded, lights show and alarms are sounded.

Write for Bulletin—Regulators, Station, District, Service and Appliance—Back Pressure Valves
U-Gauges—Iron Sponge—Iron Oxide

Gonnelly

Iron Sponge & Governor Co.

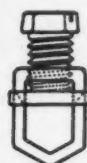
Chicago, Ill.

Elizabeth, N.J.

SIMPLE, ISN'T IT?



NOTICE: The triangular wedge formed by the tang and V-bottom collar which forces the wire into a solid mesh—



NO set-screw contact...

NO flattening or separating of wires...

NO limitation to one size wire...

NO shearing effect whatsoever...

NO special tools required to make connection...

NO need for you to search any longer for the PERFECT solderless connector—WE HAVE IT

FREE! A large display board, containing mounted samples of ILSCO lugs. Sent upon request. Address Dept. UF.

ILSCO COPPER TUBE & PRODUCTS, INC.
5629 Madison Rd. Cincinnati, Ohio

It'll pay you to INVESTIGATE...

STOWE STOKERS



• Compensating feed—positive rear end air seals—unrestricted coal selection—and much reduced pit losses—these are some of the advantages the Stowe Stokers—and only Stowe Stokers can give you. Investigate these exclusive features. Full details, and a copy of Catalog No. 10, on request. Send for one.

THE JOHNSTON & JENNINGS CO.
977 Addison Road Cleveland, Ohio
Engineering and Sales Services in Principal Cities

A battery of four Stowe Stokers burning cheap midwestern coal—at high efficiency.

Catalog No. 10 is complete with 14 diagrams, 20 illustrations. Send for one.



STOWE STOKERS

★ Compensating Feed

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F.

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air seals-
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give you
tails, and
for one

STOW
OKERS

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Clear

... FLAWLESS GLASS with
BRASS BUSHING—the IDEAL insulator

When you "line up" with
HEMINGRAY you line up
these Advantages:

1. Brass bushed smooth threads for insulator pin.
2. Greater mechanical strength.
3. Sustained high dielectric strength.
4. Unaffected by sudden temperature changes.
5. Withstand maximum insulator pin expansion.
6. Never age or deteriorate.
7. Controlled uniformity of product.
8. All surfaces impervious to moisture.
9. Tougher—withstand rough handling.
10. Clear and flawless for easy inspection.

● This rugged new Hemingray Glass Insulator stands up better in all adverse weather conditions. It's brass bushed, providing perfect threads for uniform contact with pin—permitting quick, full-length insertion—and safeguarding against pin expansion. Its many all-around advantages clearly point to the brass bushed Hemingray as the ideal insulator for low-cost distribution service. All styles in clear and brown color. Ratings up to 15,000 volts. Write for descriptive bulletin . . . Owens-Illinois Glass Company, Hemingray Division, Muncie, Ind.

HEMINGRAY

INSULATORS

Exide

BATTERIES

—choice of transit systems and bus lines whose policies permit no compromise with quality « «

It is significant that Exide Batteries are used by so many of the country's successful transit and bus lines.

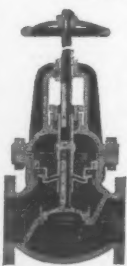
It is not to be implied, of course, that their success is dependent upon their use of Exides. But the operating company that is so meticulous in the choice of its batteries will naturally gauge the selection of all its equipment by the same high standards . . . and the traveling public appreciates the attention paid their comfort and safety.

THE ELECTRIC STORAGE BATTERY COMPANY

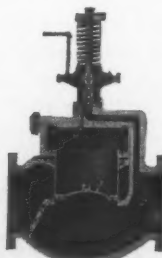
The World's Largest Manufacturers of Storage Batteries for Every Purpose
PHILADELPHIA

PLANT SAFETY

WITH GOLDEN-ANDERSON AUTOMATIC VALVES



Safety Stop Non-Return valves protect lives and property, automatically, against live steam flows due to boiler ruptures or steam line breaks.



Perfect water level control assured by the Altitude Control Valve . . . the most efficient and dependable automatic valve for tanks, standpipes and reservoirs.

Ask for your copy of catalog for our complete line of automatic control valves

Golden-Anderson Valve Specialty Co.
1380 Fulton Bldg. Pittsburgh, Pa.



- Alloy tool steels made to exacting specifications
- Old craftsman methods of individual manufacture
- The most rigid inspection and testing on each plier

Klein methods are not mass production methods but for a man who demands a plier of Klein quality there is no way to produce it except the Klein way.

Mathias KLEIN & Sons
Established 1887 Chicago, Ill. U.S.A.

The Mountain Comes To Mohammed



WE realize that most merchants do not have the opportunity of visiting the larger cities to see what is being done in the way of store front design and illumination. They do, however, have a keen desire to pattern their establishments after the style leaders. It is to satisfy this desire to follow the leaders of modern lighting and design that the Pittsburgh Plate Glass Company has started its Store Front Caravan on a nation-wide tour.

The Caravan carries twelve scale models showing the most advanced thought in store front styling and construction. Exact to the smallest detail, including exterior and interior lighting effects, these models will graphically demonstrate what can be done with old-fashioned fronts—and the resulting desire for modernization should be mutually beneficial to all those interested in selling lighting and store front improvement.

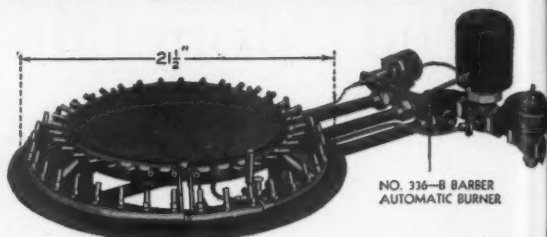
You will be advised in advance of the Caravan's arrival in your locality so that you will have ample time to arrange for your lighting prospects to view these models. Use the strong selling power of these scale models to assist in closing your sales. Literature minutely describing the lighting and structural features of these fronts will be available for distribution in these meetings.

For further information on the Caravan write the Pittsburgh Plate Glass Company at Pittsburgh.

CARRARA STRUCTURAL GLASS	PITTCO STORE FRONTS	PITTSBURGH PAINT PRODUCTS
PITTCO STORE FRONT METAL		POLISHED PLATE GLASS
PITTSBURGH MIRRORS		TAPESTRY GLASS
<i>glass...metal...paint</i>		
PRODUCTS OF		
<i>Paint</i>	PITTSBURGH	<i>Glass</i>
PLATE GLASS COMPANY		

BARBER BURNERS Offer a COMPLETE Range of Sizes and Shapes!

BARBER Conversion Burners are made in such a wide variety of sizes and types (from "small-house" to fully "Automatic Control" models) that it is easy to select the PROPER one to FIT any home heating plant. Round or rectangular furnaces or boilers, of ANY grate dimensions, are thus enabled to deliver their *maximum efficiency*. It naturally costs BARBER more to offer this extra variety, but it costs YOU no more—and it is absolutely imperative to the final satisfaction of your customers. Remember that when you tie up with ANY Conversion Burner.



- "Tailor-made" to suit and fit the grate dimensions of round or oblong furnaces or boilers.
- Insures a "scrubbing" flame action on side walls of firebox, the proper level, with 1900° Fahrenheit flame temperature. No brick or refractory elements needed.
- Furnished with Baltimore Safety Pilot Control—positive and accurate. Listed in the A. G. A. Directory of Approved Appliances.

We supply Sales Literature, Specification Data Sheets and Practical Sales Assistance. Write for Latest Illustrated Catalog No. 37 and Revised Price List.

THE BARBER GAS BURNER COMPANY
3704 Superior Avenue, Cleveland, Ohio

THE BARBER GAS BURNER CO. OF MICHIGAN
4475 Cass Avenue, Detroit, Michigan

BARBER *Automatic* JET GAS BURNERS

For Warm Air Furnaces, Steam and Hot Water Boilers and Other Appliances

Style Bar-S All Weather Binder FOR METER READING



Write us for circular and details. Send sample of your sheet for prices on any quantity of binders.

GRAND RAPIDS LOOSE LEAF BINDER COMPANY
10-16 Logan Street, S. W. **GRAND RAPIDS, MICH.**

7 MILLION

HYGRADE LAMP BULBS



help you BUILD LOAD

Over seventeen million incandescent lamps, eighteen million radio tubes sold during 1935 in this country were Hygrade-Sylvania made. As the third largest manufacturer of incandescent lamps, and second largest of radio tubes, Hygrade-Sylvania products are efficiently consuming an important part of the total current sold by public utilities the country over. Many of these lamps and tubes are helping to build load on your lines.

When you are buying lamps (multiple or series) for street lighting, Hygrade-Sylvania Corporation deserves your consideration. Hygrade Lamps offer you the opportunity to make definite economies in street lighting costs without the slightest sacrifice of quality. Let us prove it with facts and figures!

Hygrade LAMP BULBS

© 1936, HYGRADE SYLVANIA CORP., Salem, Mass.
Makers of SYLVANIA Set-Tested RADIO TUBES

SPECIALISTS IN
STREET LAMPS

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A New Low-Cost Foam Tool!

Combines Water, Solution and Air To Form Fire-Smothering Foam

Public utilities are welcoming this revolutionary larger-capacity foam equipment for flammable liquid fires.

The specially designed PHOMAIRE Play Pipe connects to your hose line ($\frac{3}{4}$ " to $2\frac{1}{2}$ "). When the water is turned on, PHOMAIDE, a new foam-making solution carried in a Hip Pack, and air are automatically drawn into the water stream in the proper proportions to form foam.

There are no complicated preliminaries, no confusing adjustments, no moving parts. And only one man is required at the Play Pipe.

Less than 20 gallons of water at a pressure of 75 pounds or more are required per minute. This is the only efficient foam unit available for small lines. One gallon of Phomaide Solution makes 350 gallons of foam. 300 to 400 gallons per minute may be continuously produced by merely pouring additional solution into the Hip Pack.

This is NEWS. Without obligation, ask for descriptive literature, prices and a demonstration of the Phomaire Unit illustrated at the left. Don't wait! Mail your request now.



Get the Latest Foam Equipment

Phomaire and **Phomaide**
PLAY PIPE SOLUTION

developed, made and sold by

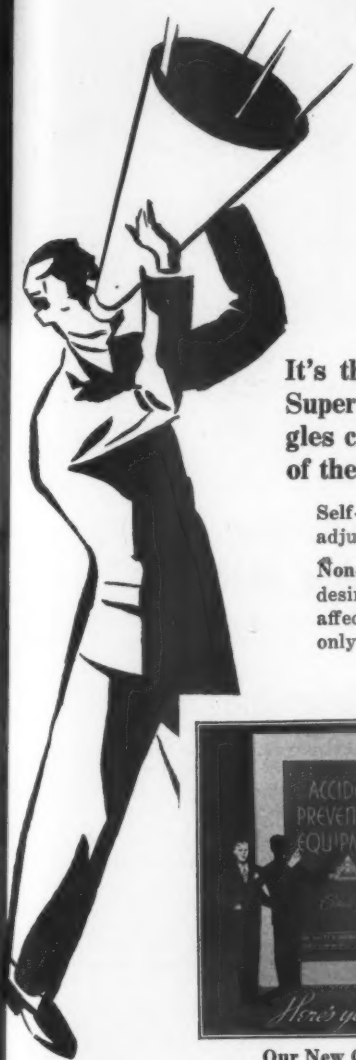
Pyrene Manufacturing Company
NEWARK NEW JERSEY

ATLANTA
KANSAS CITY



CHICAGO
SAN FRANCISCO

We Have Something To =SHOUT About!



It's the sure and dependable eye protection that Super-Drednaut and **ONLY** Super-Drednaut goggles can give, because they embody **ALL THREE** of the following features—

Self-Adjusting Nose Bridge, which instantly and automatically adjusts itself comfortably to any size or shape of nose.

Non-Rubber Headband—contains no rubber, yet maintains the desired tension and stays adjusted indefinitely. It is not affected by moisture, perspiration, oil or grease. It is the only headband suitable for "Hot Weather" conditions.

Super-Drednaut Deep Curved Lenses have proven, through tests, long wear and hard usage that they provide a greater strength, greater resistance to hard blows than any other form of lenses.

And, even if lens should become broken by a tremendous blow the curvature tends to prevent the glass from being driven into the eye. **ONLY** curved lenses **CAN** give this protection.

Super-Drednauts are daily preventing eye injuries to thousands of workmen because they give **MAXIMUM** eye protection.

Send for a Super-Drednaut TODAY and try it.



Our New Catalog

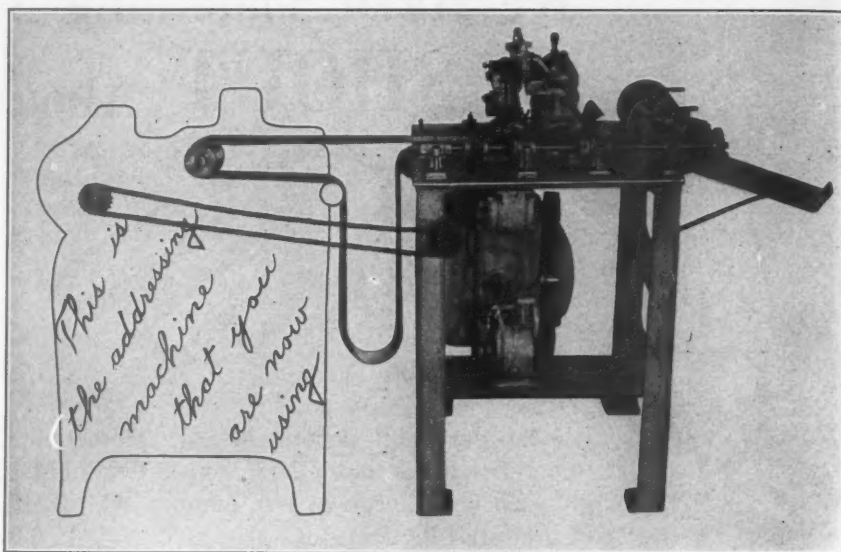
THE SAFETY EQUIPMENT SERVICE CO.

Buell W. Nutt, President

:::

1230 St. Clair Avenue, Cleveland, Ohio

Manufacturers of a Complete Line of Accident-Prevention Equipment



Here's a Bill Printing Machine that can be used with ANY Addressing Machine

Instead of continually paying money for pre-printed bills, convert your *present* addressing system into a *combination* printing and addressing system. You can readily do it with the

Elliott Bill Printing Machine

This machine will pull blank paper, from rolls, under the addressing head of your present addressing machine to receive the addresses. It will then continue feeding this paper through the printer (shown above at the right), where it is printed on the front and back, scored, dated and chopped off.

With the Elliott Bill Printing Machine you not only save on printing bills, but you speed up your addressing operation, as it is really an automatic feed through the addressing machine instead of a hand feed.

Here is something new, designed to bring the advantages of bill printing to those who do not desire to make extensive changes in their addressing system. The Elliott Bill Printing Machine can be used in conjunction with any model of any addressing machine now used for Utilities' billing and with any kind of an addressing medium.

Write NOW for details of this time and money saving combination. State what addressing machine you are now using, size of list, etc.

THE ELLIOTT ADDRESSING MACHINE COMPANY

Manufacturers of Hand and Electric Addressing Machines for Every Need and Purpose

INCORPORATED 1900 RATED AAA1

175 ALBANY STREET, CAMBRIDGE, MASS.

SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES

Household appliances which, in their performance, satisfy even the most critical users, are of priceless value as builders of good will. Added to the superior performance of the new **NIAGARA Two-Twenty Gas Air-Conditioning Unit** is its appearance of dignity and good taste. The complimentary comments being heard at its showings indicate that it is instantly recognized as a winner of new customers.

Walter L. Seelbach

W. L. Seelbach, *Secretary-Treasurer*

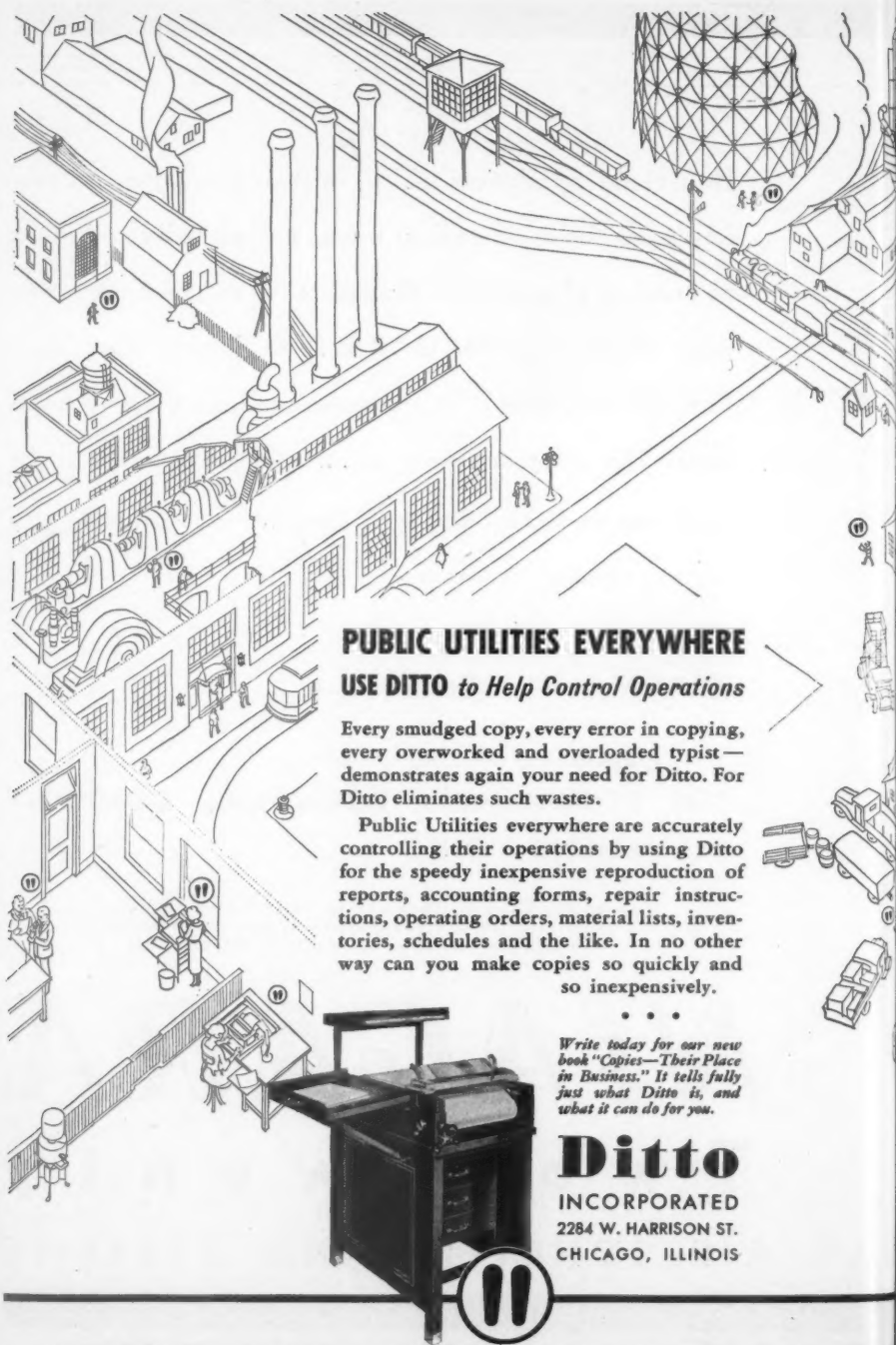
**THE FOREST CITY FOUNDRIES COMPANY
CLEVELAND, OHIO**

▶ Niagara Gas Fired Air-Conditioning Units will be displayed at the Association of Gas Appliances and Equipment Manufacturers Exposition at Atlantic City in October, 1936. ◀

NIAGARA

Two - Twenty

GAS AIR-CONDITIONING SYSTEMS



PUBLIC UTILITIES EVERYWHERE
USE DITTO to Help Control Operations

Every smudged copy, every error in copying, every overworked and overloaded typist—demonstrates again your need for Ditto. For Ditto eliminates such wastes.

Public Utilities everywhere are accurately controlling their operations by using Ditto for the speedy inexpensive reproduction of reports, accounting forms, repair instructions, operating orders, material lists, inventories, schedules and the like. In no other way can you make copies so quickly and so inexpensively.

... .

Write today for our new book "Copies—Their Place in Business." It tells fully just what Ditto is, and what it can do for you.

Ditto
 INCORPORATED
 2284 W. HARRISON ST.
 CHICAGO, ILLINOIS

PROOF!

UTILITIES CAN DO BETTER WITH FRIGIDAIRE



More Than \$6 Per Meter!

*... the 1936 refrigerator sales
record of many utilities with Frigidaire*

● This, you will agree, is an outstanding refrigerator sales performance for *an entire year*. Yet many utilities with Frigidaire reached this high mark during the *first six months* of 1936!

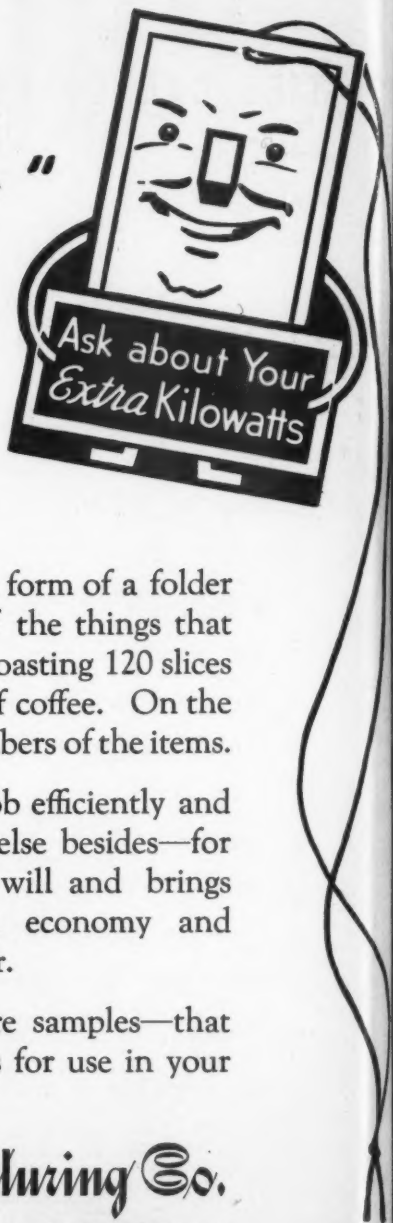
An even greater number of them enjoyed refrigerator sales in excess of \$5 per meter, for the same period of time.

Records like these clearly prove that Frigidaire's association with utility companies is of mutual benefit—"a valuable partnership."

FRIGIDAIRE CORPORATION • DAYTON, OHIO



"*I'm only a
Kilowatt*"



—but just see what I can do," says this unusual tag used by a well known light and power company that is doing an outstanding merchandizing job. It's made in the form of a folder and lists on the inside some of the things that one kilowatt will do—such as toasting 120 slices of bread, or making 189 cups of coffee. On the back is space for prices and numbers of the items.

¶ This tag not only does its job efficiently and economically—but something else besides—for its light touch builds good will and brings home to the consumer the economy and variety of uses of electric power.

¶ Would you like to see more samples—that might give you some new ideas for use in your own business? Just write

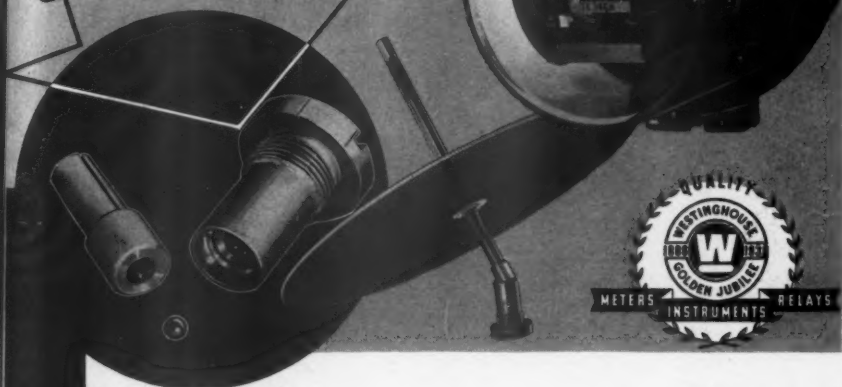
Dennison Manufacturing Co.

FRAMINGHAM

Dept. ML

MASSACHUSETTS

FOUND Only in WESTINGHOUSE METERS



the bearing that saves the cost of periodic lower-bearing replacements. Operating records throughout the country definitely show that this ball and double-jewel bearing has almost unlimited life. Requiring no lubrication, it may be safely left in service during the entire life of the meter. This bearing typifies the whole construction of Westinghouse Watthour Meters. Designed not only for initial accuracy, but also for sustained accuracy, these meters assure the most accurate registration of consumed energy, with minimum attention and maintenance.

Other points of superiority are one-piece electromagnets, complete temperature compensation, and gold-plated register gears. All parts are made with such precision that adjustments are eliminated, assuring mechanical stability under all conditions. Our Meter Specialist in the Westinghouse district office near you will be glad to furnish detailed information about the outstanding accuracy and economy of Westinghouse meters.

J 90088

Westinghouse

A WESTINGHOUSE METER FOR EVERY NEED



C-2 Polyphase



CA Single-Element



CS Single-Element



CS-5 Two-Element



CA-5 Two-Element

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BE GUIDED
*by facts, not claims
 by service records,
 not initial tests
 by experience,
 not prophecy*

**KERITE
 CABLES**
 INSTALLED IN
 1909, 1910, 1911
 They have all given
 and are still giving
 continuous and sat-
 isfactory service.

Kinner
 efficiency
 window
 and co
 wall sp
 of we
 . . .
 under
 in any
 ally or
 service
 door

This



*Let us be your
"Door Doctor"*

KINNEAR *prescribes doors that*
cost **LESS TO OPERATE**



**Opens Conveniently
Out Of The Way**

Kinnear Steel Rolling Doors provide proved efficiency for "New-Day" needs. Operates like a window-shade . . . spring counterbalanced and coiling above the lintel. Saves floor and wall space. Opens or closes easily in all kinds of weather. Remarkably strong and durable . . . and flexible enough that it will not shatter under blows, like the old rigid type door. Built in any size for old or new buildings . . . manually or electrically operated . . . and for either service or fire purposes. If you want to cut door overhead to the bone you'll want to investigate this door.

You call a Doctor when ill . . . or an attorney when in legal trouble. And nine chances out of ten you select such professional counsel on the basis of their experience and past accomplishments. To select "Door Counsel" on the same basis is just as logical. Otherwise you take chances with your door operating and maintenance costs . . . chances on inefficiency that reduces ultimate profits. Specializing exclusively in UPWARD-ACTING Doors for over 40 years Kinnear knows the door business . . . have especially built doors for Utilities in all parts of the world that through the years have proved their lower cost of operation and maintenance. Kinnear diagnoses the problem and then recommends the most efficient door for that particular situation. They're "Door Doctors," so when having "door ailments" call KINNEAR and get specialized advice.

Write TODAY for Kinnear's complete catalog, describing Steel Rolling Service and Fire Doors, Wood and Steel Bi-folding Doors, Sectional Upward-Acting Doors, Motor Operated Doors and Metal Rolling Grilles. It illustrates Kinnear's qualifications for serving you.

The KINNEAR MFG. CO.
2060-80 Fields Ave. Columbus, Ohio

KINNEAR
ROLLING METAL OR WOOD DOORS

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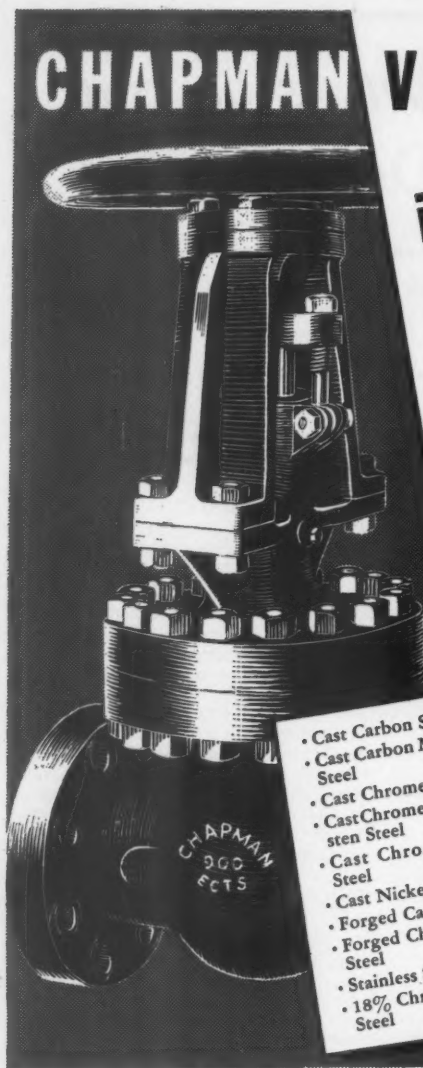
CHAPMAN VALVES . . .

in the RIGHT STEEL for all TOUGH JOBS

The toughest jobs you can give them . . . at highest temperatures and pressures . . . are too tough for Chapman Steel Valves. The valves are made from special steels poured in the Chapman foundries under precise metallurgical control. They are machined to standards of accuracy and finish that assure trouble-free operation and long life. Choose Chapman and you choose economy and safety . . . under all conditions.

The Chapman line is complete in cast and forged steel, gate, globe and check valves and fittings in ten different steels, for pressures from 150 to 1500 lbs., and temperatures from 100°F. below to 1000°F. above. Also standard bronze and iron gate and check valves, sluice gates and draft valves. Catalog for the asking.

- Cast Carbon Steel
- Cast Carbon Molybdenum Steel
- Cast Chrome Nickel Steel
- Cast Chrome Nickel Tungsten Steel
- Cast Chrome Tungsten Steel
- Cast Nickel Steel
- Forged Carbon Steel
- Forged Chrome Tungsten Steel
- Stainless Steel
- 18% Chrome, 8% Nickel Steel



The CHAPMAN VALVE

MANUFACTURING COMPANY

INDIAN ORCHARD, MASSACHUSETTS

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Knee deep in trouble *When figures jam!*



MONROE

NEW GROUP AND GRAND
TOTAL ADDING-LISTING
MACHINE

Complex registers, one for group totals
and sub-totals, and one for grand
totals and sub-totals. . . . automatic
negative totals and sub-totals.

Every hour of every day business depends on figures; they flow through every office, factory, and store in a never-ceasing stream. Figures are the very life blood of business.

Ever since the first Monroe Adding-Calculator was made and sold twenty-four years ago, Monroe has played the major part in simplifying, speeding, and cutting the cost of producing accurate business figures.

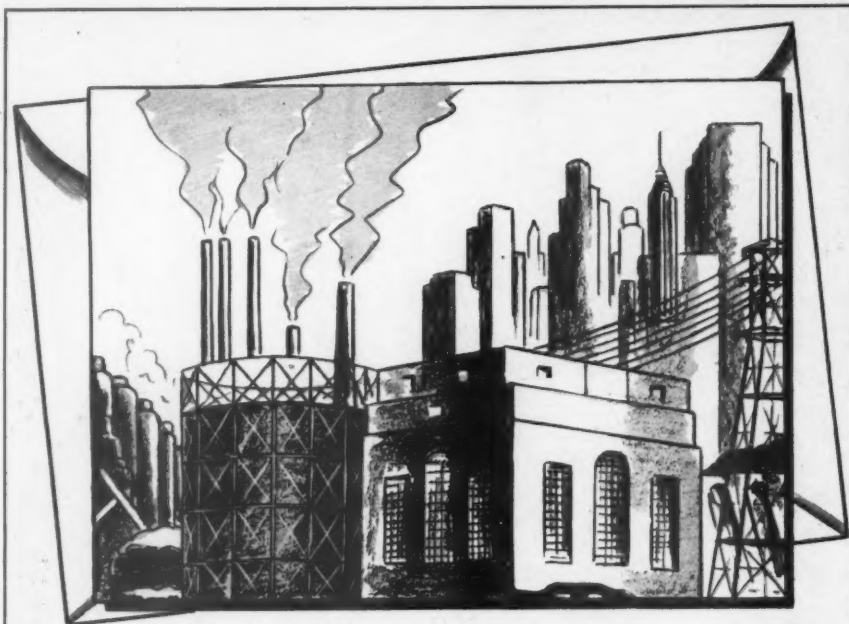
Monroe offers 197 different models: calculators, adding-listing machines, bookkeeping machines, check writers and

signers. Each Monroe is compact and desk-size, each one has the famous "Velvet Touch" keyboard that takes the strain from figuring. Back of every Monroe machine is a nation-wide figure service, rendered to every Monroe user through 150 Monroe-owned branches from coast to coast.

Try a "Velvet Touch" Monroe on your own figures. The nearest Monroe branch will arrange it without obligation. Write for free copy of booklet, "If Only I Could Work On Your Desk For An Hour." Monroe Calculating Machine Co., Inc., Orange New Jersey.

Visit the Monroe Exhibit — Accounting Section, American Gas Association, Atlantic City, October 26 — 30

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EVEREADY

TRADE MARK

INDUSTRIAL FLASHLIGHT

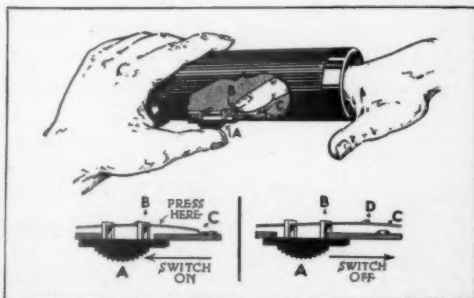
"Built for Rough Treatment"

The "Eveready" Industrial Flashlight is built for ROUGH treatment. The entire outer casing is made of heavy fibre reinforced inside by brass parts to help withstand severe service. The lens and lamp are protected by a special cushioning which softens the hardest impact. This flashlight has no exterior metal parts and it is completely insulated for working around "hot" wires, and therefore prevents shocks and short circuits. The casing will not dent and is not affected by oils, grease, gasoline, alcohol or other solvents and does not deteriorate with age.

The moulded slide switch is positive in operation and slides "on and off" easily. The whole assembly can be readily taken apart and put together without tools. Particles of grit cannot cause trouble.


TO REMOVE: Slide the switch "A" to the "on" position and hold it firmly against the tube with the thumb. Insert longest finger of right hand in tube and press brass contact strip "C" directly in front of lug "B". This pressure releases the latch and the strip will slide out.

TO REPLACE: Hold flashlight as shown and press the switch "A" in the "off" position, holding it firmly against the tube. Insert brass contact strip "C" with the small raised latch piece "D" on the top. Push it through the slot in the first lug "B". Press down on the slide to flatten the "bow". This pressure will lift the end so it may be pushed in through the second lug. Continue to push forward until a distinct click is heard. Then the switch is latched and properly assembled.



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WE have spoken so often in these advertisements of the high cost of low power factor operation of customers' plants that the following example should bear witness to this point. It is deduced from one of our own case studies, an investigation in a metal working plant to determine the comparative costs of Modern Group Drive vs unit motor drive for 36 machines:

	<i>M. G. D.</i>	<i>Unit Motor Drive</i>
Connected motor load in H.P. _____	890	1554
Power factor _____	.836	.642
Annual current consumption in K.W. hrs _____	617,000	655,000
Utility Revenue _____	\$6,712.00	\$7,120.00 (A)
Customer's Real Power Cost per year _____	\$15,865.90	\$25,195.57 (B)
Customer's Investment in Power Transmission _____	\$56,105.97	\$107,703.82

The \$408.00 additional annual revenue to the utility (A) actually costs the customer \$9,329.67 per year (B). What it costs the utility in cash and loss of good will we do not know. It's worth investigation, however.

We invite your coöperation in our efforts to educate industrial plant executives to the engineering and economic advantages of applying The Right Drive to Every Machine.

*POWER TRANSMISSION COUNCIL

75 State Street, Boston, Mass.

*A research association of producers and distributors of power, power units and mechanical equipment for the transmission of power.

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All we ask is that you compare it, test it, side by side with your present mimeograph paper.

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PUP 10-8

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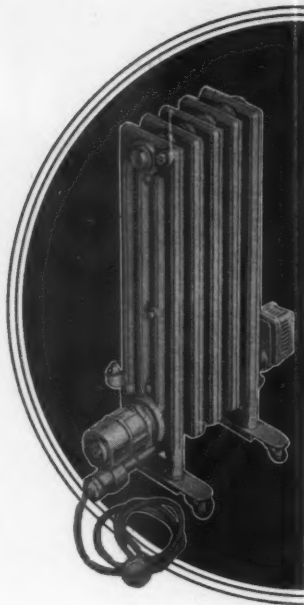
Send for prices, discounts and full particulars.

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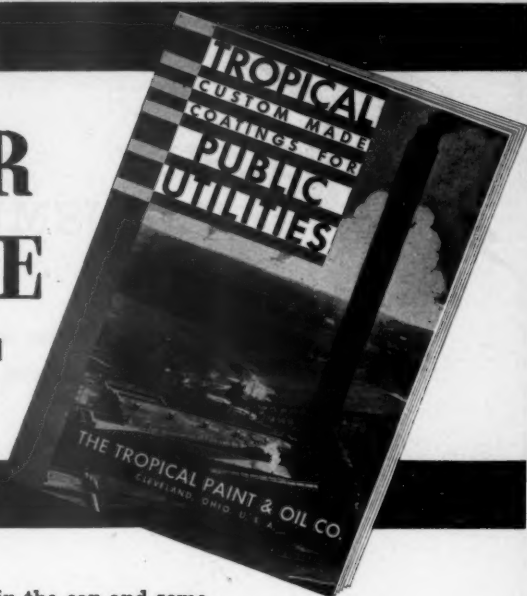
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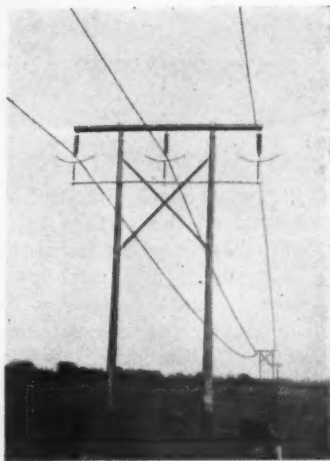
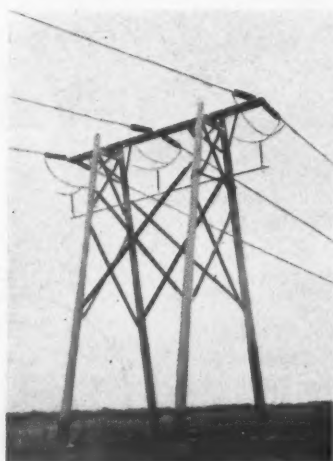
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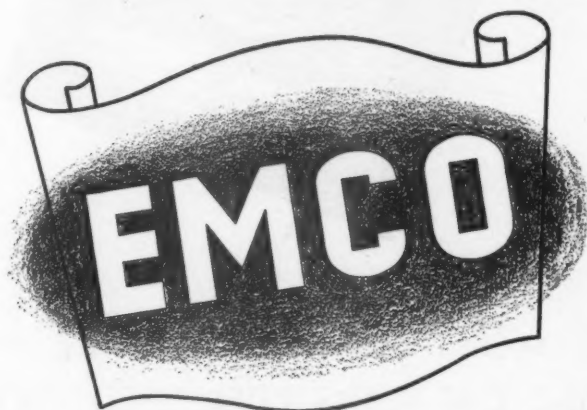
NEW YORK

Canadian Hoosier Engineering Company, Ltd., Montreal

DIRECTORS OF TRANSMISSION LINES

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A SYMBOL of QUALITY
in METERS and REGULATORS



Turn back a half century, to the days when it was real luxury to burn gas for lighting instead of using oil lamps—when cooking and heating was done with wood or coal. It was then that George Westinghouse, the founder of the company that is now Pittsburgh Equitable, set about to further the use of Natural Gas as a domestic fuel.

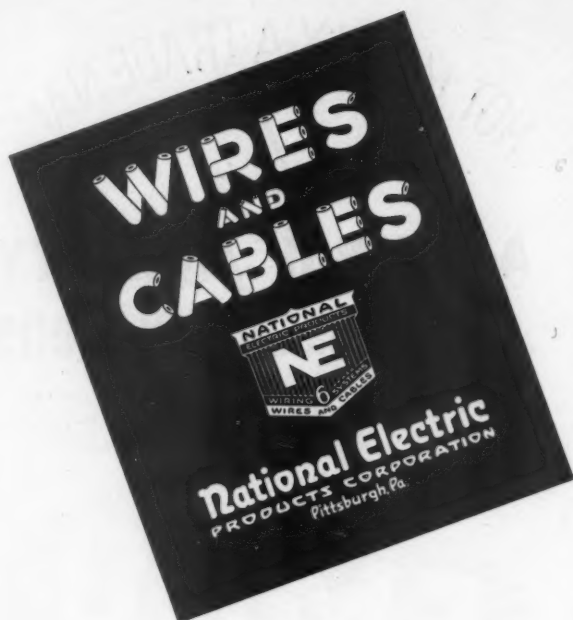
It was his ingenuity that led to the development and improvement of a gas meter that would measure the newly created domestic load. That was the beginning of the complete line of products that today bears the name EMCO.

Design and manufacturing methods have changed through the years, but EMCO quality remains as it was originally—**ONLY THE BEST**. EMCO products are the culmination of years of diligent research and applied science in the laboratory, supplemented by actual operating tests in the field. They are products built only of the best materials, fabricated to the closest limits, assembled and tested by craftsmen with untiring patience in the most modern and best equipped meter and regulator factories in the world.

EMCO is not merely a trade name—but a Symbol of Quality.

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National Electric
PRODUCTS CORPORATION

1301 Fulton Building

Pittsburgh, Pa.





Utilities Almanack

OCTOBER

8	Th	¶ Association of American Railroads, Telephone, and Telegraph Section concludes session, Washington, D. C., 1936.
9	F	¶ National Safety Congress ends annual convention, Atlantic City, N. J., 1936. ¶ League of Nebraska Municipalities ends meeting, North Platte, Neb., 1936.
10	Sa	¶ Electrochemical Society concludes fall meeting, Niagara Falls, Ont., 1936.
11	S	¶ International Association for Bridge and Structural Engineering ends second congress, Berlin, Germany, 1936.
12	M	¶ National Electrical Contractors Association starts convention, Atlanta, Ga., 1936.
13	Tu	¶ United States Independent Telephone Association begins meeting, Chicago, Ill., 1936. ¶ American Society of Civil Engineers opens fall meeting, Pittsburgh, Pa., 1936.
14	W	¶ Pennsylvania Water Works Association starts convention, Atlantic City, N. J., 1936.
15	Th	¶ New England Gas Asso., Acctg. Division, convenes, Providence, R. I., 1936. ¶ Independent Pioneer Telephone Asso. of U. S. convenes, Chicago, Ill., 1936.
16	F	¶ American Water Works Association, New York Section, ends 2-day convention, Saratoga Springs, N. Y., 1936.
17	Sa	¶ The Public Ownership League of America concludes annual 3-day meeting, Springfield, Ill., 1936.
18	S	¶ National Exposition of Power and Mechanical Engineering will be held, New York, N. Y., November 30-December 5, 1936.
19	M	¶ National Metal Show and American Society for Metals open session, Cleveland, Ohio, 1936.
20	Tu	¶ American Gas Association will hold 18th annual convention, Atlantic City, N. J., October 26-30, 1936.
21	W	¶ American Institute of Steel Construction, Inc., begins meeting, White Sulphur Springs, W. Va., 1936.

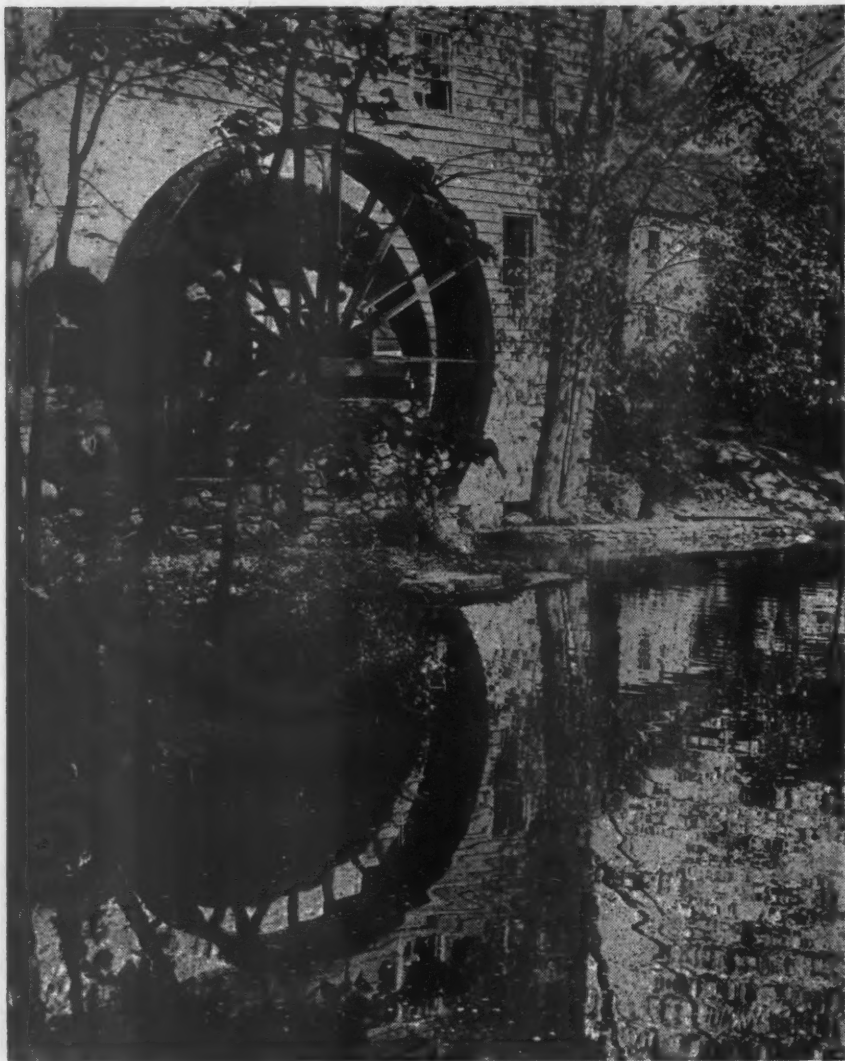


Photo by Bohlman

Hydro Power in the Horse and Buggy Days

An Old Mill in New York State

Public Utilities

FORTNIGHTLY

VOL. XVIII; No. 8



OCTOBER 8, 1936

What Will the Federal Power Program Eventually Cost?

Estimates and actual expenditures

AN analysis of estimates of cost of three great Federal projects as given out by official Washington and the actual cost as shown by authoritative records. If work announced as costing \$201,000,000 is going to cost \$551,500,000, how about the other large projects, and the countless small ones?

By HENRY EARLE RIGGS

IN a recent article in PUBLIC UTILITIES FORTNIGHTLY entitled, "Do Municipal Electric Plants Really Pay?," the writer discussed some of the problems of what is financially the most insignificant part of the power program of the present administration, the loans and grants to municipalities to build competing electric plants in cities and villages.¹ In the time elapsed since that article was written he has had the opportunity of making a rather complete study of four of the eight major Fed-

eral projects, and has visited the three western projects with whose location he was not familiar.

These studies, and the related studies of statistics of navigation and power in the territory to be served by these new plants have given the writer a new viewpoint on the entire program of the administration.

There are several questions that need to be answered very definitely. One of course is, are these plants economically justified and necessary? A second question is, will they pay operating expenses and fixed charges and finally be self-liquidating? The

¹ PUBLIC UTILITIES FORTNIGHTLY, September 24, 1936, p. 363.

PUBLIC UTILITIES FORTNIGHTLY

answer to these as to at least three of the four plants of which the writer has knowledge is an emphatic NO. As to the other one its depends largely on the policy to be adopted by the government in marketing its power.

This article is not designed to touch on these two questions but on a third, and the most important question of all which is this: How many hundred million dollars more than the presently "allocated" amount is the United States committed to in order to complete the work now projected and under construction?

This particular article is written to call attention to the magnitude of this question and to present enough facts readily capable of proof by the record to show that the hasty adoption of ill-considered projects by the administration will burden the taxpayers not only with additional hundreds of millions of dollars of capital investment over and above the figures given out but also will place on the nation a burden of fixed charges and operating expenses of many millions of dollars a year.

THE program, as shown on the last map issued by PUBLIC UTILITIES FORTNIGHTLY, is summarized as follows:

Federal projects	\$816,302,000
State and district projects ...	116,600,754
Municipal projects	36,000,000
Rural electrification	100,000,000
Surveys, investigations, etc. ..	3,425,000
Total	\$1,072,327,754

The major group of projects, the Federal group, shows the following list:

Tennessee Valley Authority ..	\$265,000,000
Central valley, California	170,000,000
Boulder dam	108,660,000
Fort Peck dam*	86,000,000
Grand Coulee dam*	60,000,000

Bonneville dam*	\$55,000,000
Passamaquoddy Tidal Power ..	36,000,000
Casper Alcova	22,700,000
Bluestone, Virginia	12,942,000
Total	\$816,302,000

This article deals primarily with the writer's study of the three marked with an asterisk. The Grand Coulee dam allocation of \$60,000,000 is accompanied with the notation that this is only preliminary and the estimate of the project exceeds \$300,000,000. Boulder dam is a project of the previous administration and was well on its way to completion in March of 1933. The power development at that dam is wholly self-liquidating under agreements made before construction and it should properly be excluded, leaving a grand total as above for seven projects of \$707,642,000.

THE writer proposes to show that the three projects indicated, which total \$201,000,000 or 28.4 per cent of the total exclusive of Boulder dam, have actually committed the Nation, if the projects are fully carried out as designed, to a total of \$551,500,000, an increase of \$350,500,000 or 174 per cent above the announced cost of these plants. And there are enough other figures to be found to make one wonder just how far short of the final cost the \$551,500,000 will be.

If these things be true of three projects out of seven, how about the others? Have we any assurance that any of them will come within the estimates? The reasons for the great difference between the first estimates and final cost is not to be laid to waste of money, poor planning, or the use of uneconomical construction methods. None of these things are to be found

WHAT WILL FEDERAL POWER PROGRAM EVENTUALLY COST?

on these three jobs. These are no "boondoggling" enterprises, they are great engineering undertakings, splendidly planned, in charge of highly competent and thoroughly experienced engineers, and they are being built with the very best of materials, the most modern and up-to-date machinery and construction methods, and the builders are overcoming some of the greatest construction difficulties that have ever been encountered by American engineers.

The fault lies in the hasty and ill-considered approval of great projects with only preliminary plans, without adequate exploration of the sites, without such careful study as would give the designers knowledge of the problems they must solve and without time for securing the data for accurate estimates.

Two of these dams are being built by the Corps of Engineers of the Army, the other one by the Bureau of Reclamation. The splendid record of these two agencies of government in handling great construction work is well known and is sufficient guaranty that when done these undertakings will be well done and, as engineering structures, something to be proud of. There are so many technical articles descriptive of these three great dams that no attempt will be made to describe them other than to emphasize

the magnitude of these undertakings that seem to have been authorized without much more consideration than the average man would give to the purchase of a new automobile.

The economics of these projects cannot be discussed in this paper. That is a longer story that involves studies of power markets and power sales in Oregon, Washington, and Idaho, and delving into the whole story of navigation and river improvement on the Missouri river. The writer has made such studies which convince him that no possible proof of necessity or economic justification can be offered as to the Fort Peck or Grand Coulee projects, and that the success of Bonneville dam, which will be one of the world's most beautiful power plants, depends wholly on the marketing policy to be adopted by the government.

So much for those aspects of these projects.

FORT Peck dam, on the Missouri river, 1,878 miles above the mouth of the river, 1,502 miles above Kansas City, and 1,109 miles above Sioux City, Iowa, is a project almost wholly in aid of navigation. When finished it will permit the regulation of flow in the river to secure a minimum flow of 30,000 second feet, and provide an 8-foot depth in the channel between Sioux City, Iowa, and the mouth of



Q "THE writer has made . . . studies which convince him that no possible proof of necessity or economic justification can be offered as to the Fort Peck or Grand Coulee projects, and that the success of Bonneville dam, which will be one of the world's most beautiful power plants, depends wholly on the marketing policy to be adopted by the government."

PUBLIC UTILITIES FORTNIGHTLY

the river. It will have some effect, difficult to exactly evaluate, as a flood protection measure and in the reduction of bank erosion. It will be of little or no benefit in reducing the flood crests on the Mississippi river.

No power plant is being installed now, but provision is being made for a possible future installation. No irrigation is being provided for although that may also be a future by-product of this dam. No locks are being installed, and the very small expenditures on the upper river in recent years leads to the conclusion that there is not, and there is not expected to be, any river traffic above Yankton. Therefore whatever may be the added value an 8-foot depth of water over a 6-foot depth between Sioux City and the mouth of the river, that is the value of Fort Peck dam.

THE dam itself will be the *largest earth dam in the world*; 240 feet high, over half a mile wide at the base, nearly 4 miles long, and containing one hundred million cubic yards of earth. It is a mammoth structure.

Its auxiliary structures, four tunnels each 24 feet in diameter with a total length of 4.8 miles, a spillway, about 3 miles from the dam, which is 2 miles long, concrete lined with sixteen gates 25 feet by 40 feet, are as imposing as the dam itself. They required some 14,000,000 cubic yards of excavation, 124,000 tons of steel (including the sheet piling of the dam itself) and 1,330,000 cubic yards of concrete.

Such items of preliminary construction as 288 miles of 150,000-volt transmission line, many miles of high-

way and railway, a bridge across the Missouri river, and a town to house nearly 500 families and several thousand workmen were incidental to construction of the dam.

It is small wonder that when an engineer is called on for a hurry-up estimate on such a job, when no data as to conditions at the site are available, the resulting figure must of necessity be of a most general and preliminary nature and subject to revision.

The record is clear as to what happened at Fort Peck. The report of the Chief of Engineers of the United States Army for 1934, on pages 841 and 842, says regarding Fort Peck:

No work has been authorized by Congress. The provision of an earth dam for impounding water for the improvement of navigation on the Missouri, Sioux City to the mouth, as recommended by the Chief of Engineers, September 30, 1933, was included in the Public Works program under the National Industrial Recovery Act. . . . Total construction cost of the reservoir (estimated) \$86,000,000. . . . Clearing of timber from the dam site was commenced October 23, 1933.

THE report for 1935 says, on page 1013, that the project "was authorized by the Public Works Administration, October 24, 1933, and adopted by the River & Harbor Act of August 30, 1935. (4 Doc. No. 238, 73rd Congress, 2nd Sess.)" This report further states: "The estimate of cost of new work, revised in 1935, is \$110,000,000." The date of final completion is fixed at October, 1939. Here then is an increase from \$86,000,000 to \$110,000,000, a total increase of \$24,000,000 or 27.9 per cent in Fort Peck dam.

Under an act passed by the Congress in 1927, the Corps of Engineers of the Army was authorized to make a study of the major rivers of the coun-

WHAT WILL FEDERAL POWER PROGRAM EVENTUALLY COST?

What Will the Cost Be?

"... there is every reason to suspect that these three jobs [Fort Peck, Grand Coulee, and Bonneville] may exceed this 551 million dollar figure by 25 to 50 millions of dollars. So many things have been going on in the last three years that it is worse than a three-ring circus. The business or professional man cannot possibly know what is being done or how much it is costing."



try and report on possible development of them in aid of navigation, flood control, power, and irrigation. These reports are known as the "308 Reports."

Engineering News Record, issue of November 29, 1934, discusses this report in connection with an early article on Fort Peck, and on page 693 says:

Lack of knowledge of the Fort Peck project was due to the fact that a Corps of Engineers report upon the development of the Missouri river for navigation, flood control, power, and irrigation, which set forth the possibilities of a reservoir on the Missouri river near Fort Peck, had only recently been completed and had not been printed, nor had the whole project for coordinated development of the river contained therein been specifically considered by Congress.

The sequence of events seems to have been:

1. Recommendation of the Chief of Engineers, Sept. 30, 1933.
2. Commencement of clearing work on the dam, Oct. 23, 1933.
3. Authorization by PWA, Oct. 24, 1933.
4. Approval of Congress (by inclusion in R & H Act) Aug. 30, 1935.

The same article of *Engineering News Record*, on page 694, calls attention to the opinion of the division engineer at St. Louis that the small reservoir designed for flood control

only at Fort Peck was not capable of giving a depth of 8 to 9 feet below Yankton and recommended the larger reservoir to cost \$84,200,000, and also calls attention to further work on river improvement which with Fort Peck reservoir would total \$169,000,000, and, adding work already done and paid for of \$65,000,000, would total \$234,000,000.

As the writer analyzes the work on the Missouri river during the Roosevelt administration, as shown by Reports of the Chief of Engineers, the figures are (see page 460).

It would therefore appear that new construction in aid of navigation on the Missouri in four years would total \$191,652,000 instead of the \$169,000,000 estimated.

This work on the river channel was obviously necessary if Fort Peck dam is to be justified at all, as the chief function of the dam is to give an 8-foot depth of water in the channel established by this other work.

Attention might properly be called to the fact that \$265,987,980 is quite an investment in aid of navigation. It ought to pay for a lot of transportation. In 1934, the grand total tons moved on the river are reported as

PUBLIC UTILITIES FORTNIGHTLY

	<i>New Work</i>	<i>Maintenance</i>	<i>Total</i>
Actually spent, June, 1933, to June, 1935	\$29,843,915	\$1,667,663	\$31,511,578
Proposed for fiscal year 1936	22,808,467	1,854,895	24,663,362
Recommended for year 1937	29,000,000	2,920,000	31,920,000
Total—June, 1933, to June, 1937	\$81,652,382	\$6,442,558	\$88,094,940
Spent in all previous years	74,335,598	10,603,140	91,909,248*
Add Fort Peck dam	110,000,000		110,000,000
	\$265,987,980		\$290,004,188*

* Includes \$6,970,510 spent prior to 1902 not separated between Construction and Maintenance.



1,680,066. An analysis shows that 1,493,300 of this was piling and brush, stone, sand, and gravel used almost wholly in government construction work, leaving less than 187,000 tons of all other freight. Only one other year in the years back to 1920 has a greater tonnage been reported. Total ton miles in 1934 amounted to 14,600,000, indicating an average length of movement of 8.7 miles.

Let each reader solve the question of justification for himself.

BONNEVILLE dam on the Columbia river in Oregon about 144 miles from the mouth of the river and 40 miles above Portland, is designed as a navigation and power project.

The Army Engineers submitted a "308 Report" to Congress in 1931 giving a summary of power possibilities on the Columbia, and therein discussed the construction of either eight or ten dams, of which Bonneville was the first and Grand Coulee the furthest up the river. Two estimates were made of the completed development at Warrendale, now called Bonneville, one being for \$58,880,000 and one for \$67,000,000.

The report of the Chief of Engineers of the Army for 1934 says, on pages 1334 and 1335:

No work has been approved by Congress. The project authorized by the Federal Emergency Administration of Public Works provides for acquisition of necessary lands and construction of a dam, power plant, and lock, for power and navigations.

Work was started in October, 1933. Since that date engineer studies, surveys, exploratory drilling, construction roads and camps, temporary shift in Oregon, Washington Railroad and Navigation Company tracks and navigation locks have been completed.

The total costs incurred during that fiscal year were \$1,918,000. The Engineers' report says that "estimated cost of the dam, lock, and two power units is \$40,200,000." The date of the letter of transmittal of this report of the Chief of Engineers was October 18, 1934.

Engineering News Record, in the issue of November 1, 1934, made the following statement:

With only preliminary plans, and without having had opportunity for adequate exploration of the site, the Corps of Engineers U. S. Army, under urgent pressure from the Public Works Administration to put men to work, nearly a year ago let the first contract for the construction of a navigation and power dam across the Columbia river at Bonneville, Oregon.

Soon after the submission of the preliminary plans to Congress, the PWA, seeking projects that would create employment in the Portland area, picked upon Bonneville as a desirable undertaking and late in September of last year, allotted \$250,000 to the Corps of Engineers for further exploration and preparation of detailed plans. Only a week later an additional allotment of \$20,000,000 was made to start work.

WHAT WILL FEDERAL POWER PROGRAM EVENTUALLY COST?

THIS article gives the details of the original estimate of cost of the initial installation which estimate totaled \$31,000,000. It also describes certain changes made in the plan, such as moving the spillway section of the dam downstream 3,000 feet to effect a saving in cost; and the enlargement of the navigation lock from 76 x 360 feet long with 15 feet of water over the sill, to 76 x 500 with a 26-foot depth over the sill, at an estimated cost of \$1,500,000.

Turning to the Annual Report of the Chief of Engineers for 1935, on page 1513, the following is found:

The estimated cost of the dam, lock, two power units, and fishways is \$42,415,700.

The project was authorized September 30, 1933, by the Federal Emergency Administration of Public Works and adopted by the River & Harbor Act of August 30, 1935. (Senate Committee Print, 73rd Congress, 2nd Sess.)

This last quotation mentions fishways. The salmon fishing industry on the Columbia river is an important one bringing to Portland and vicinity annual revenues of 8 to 10 million dollars. The chief objection to the dam locally came from this industry, and to remove that objection the engineers designed and are building the most elaborate provision for caring for the movement of fish up and down stream to be found in the world.

The fish ladders and fish locks or elevators, will cost between \$3,500,000

and \$4,000,000 and undoubtedly account for and fully justify a substantial increase in the cost of the dam.

THIS project, when completed, will, in the writer's opinion, be one of the very finest projects built by the government.

It is close to Portland and the heavily populated sections of Oregon. Those populous areas in Washington, west of the Cascades, up to and including Tacoma are nearer to it than to Grand Coulee. The dam will extend deep water 50 miles up river to The Dalles, and with some work on the river channel will make the Columbia navigable for ocean-going vessels for a distance of 200 miles.

The plant is not open to criticism as to design or construction methods, and is a credit to the Army Engineers and to the eminent engineers and civilian staff engaged upon it.

It is, however, an excellent example of the uncertainty of cost which results from starting a great enterprise without full information.

Engineering News Record gives full details of the original estimate of the initial installation at \$31,000,000, but the best final authority places the actual cost at \$42,415,700, an increase of \$11,415,700 or 36.8 per cent.

The figures given out from Washington and used by PUBLIC UTILITIES



Q "THE plant [Bonneville dam] is not open to criticism as to design or construction methods, and is a credit to the Army Engineers and to the eminent engineers and civilian staff engaged upon it. It is, however, an excellent example of the uncertainty of cost which results from starting a great enterprise without full information."

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FORTNIGHTLY in the table at the beginning of this article are \$55,000,000, presumably for the completed plant. The Oregon State Planning Boards Committee, to study the wholesale cost of Bonneville power in its report (page 10) which was prepared from data furnished by the U. S. Division Engineer, places the estimated cost of the completed project at \$61,500,000, and estimates the capital cost of the transmission system and 51 receiving substations at \$43,270,000, or a grand total for plant and transmission of \$104,770,000.

GRAND Coulee dam in Washington, 70 miles south of the Canadian border, cannot be adequately discussed in a few paragraphs. The work which is now in progress is the construction of the foundations of a high dam in the Columbia river which will back the water 151 miles to the International Boundary, and which will be the largest masonry structure in the world, containing 11,250,000 cubic yards of concrete.

Auxiliary structures will be two power houses each containing nine 120,000-kilovolt amperes units and a pumping plant equipped with 20 motors with a total capacity of 660,000 horsepower operating pumps which will lift 16,000 cubic feet of water per second when operating under a 370-foot head. This will be the world's largest pumping plant.

In addition, two dams across the Grand Coulee will form a reservoir for irrigation, 268 miles of main irrigating canals will be built and all of the incidental structures.

This project rates with Fort Peck dam in magnitude of the individual

structures, and in the immense amount of incidental construction that is required to permit it to function according to plan. Unlike Fort Peck only a beginning has been made at Grand Coulee. Present contracts cover only the foundations of the river dam, and include no power house construction except the foundations, no machinery or power house equipment, and none of the irrigation structures. This project was initiated in 1933 as a "Power Yardstick."

APPARENTLY the major project now under construction was considered too large to undertake. *Engineering News Record* of August 1, 1935, refers to it as "an improvised power development, a fragment of the fully planned development that, including the land irrigation structures, had been estimated to cost some \$375,000,000."

Further on in the same article it is stated:

Thus Grand Coulee started, in essence as \$63,000,000 worth of power development. Meanwhile politics and policy had injected another factor into the northwest Federal relief works program. Oregon had demanded its share of relief works and Bonneville power and navigation dam on the lower Columbia river was given an allotment of \$31,000,000. As Bonneville was nearer the power markets and also was alone capable of furnishing more power than the market required, a reconsideration of the original plan for Grand Coulee was indicated.

That this project was entered into without due consideration and proper planning, is clearly proven by a paper by Kenneth B. Keener, Senior Engineer, U. S. Bureau of Reclamation, in *Engineering News Record* of August 1, 1935, in which he describes the conditions that led to a radical change of plans. The following quotations tell the story:

WHAT WILL FEDERAL POWER PROGRAM EVENTUALLY COST?

Early field investigations of the dam site consisted of fourteen diamond drill holes in 1921, and two additional holes in 1930. A more thorough investigation of the site was begun in the fall of 1933 and, although construction is in progress, drilling is being continued to solve various design and construction problems prior to the completion of the excavation.

Two years ago, when the \$3,300,000,000 Public Works Fund provided by the Recovery Act of 1933 was to be put to work, an allocation of money was made to begin work on the dam. This allocation was limited to \$63,000,000, or only about one third the cost of the dam and power plant, just described. (The one now under construction.) Accordingly a low dam was designed to constitute the first stage of a two stage construction, but to produce a complete operative power development without waiting for the second stage.

A contract for the construction of the low dam was entered into on July 16, 1934.

Upon further study of the effect of imposing a high dam upon the low dam, the engineers of the Bureau came to the conclusion that a change in the size and shape of the foundation, to make possible the ultimate construction of a high dam needed in irrigation should be made now.

The official order for this change of plan to the contractor was issued on June 5, 1935.

The dam and power plant have been estimated to cost some \$170,000,000. The irrigation works would cost about \$210,000,000 in addition.

THUS we have \$63,000,000 changed into "about" or "some" \$380,000,000. A good deal of doubt is thrown on this latter figure by the fact that the Army Engineers, in their "308 Report" in 1931, estimated the cost of Grand Coulee dam at \$204,483,453 instead of "some \$170,000,000," and irrigation works for 1,174,630 acres at \$207,397,120, making a

total of \$411,880,573 instead of the \$380,000,000 above given.

The writer believes that his case is proven. The figures summarize:

	<i>Original Figures</i>	<i>Minimum Revised Figures</i>
Fort Peck	\$86,000,000	\$110,000,000
Bonneville	55,000,000	61,500,000
Grand Coulee ..	60,000,000	380,000,000
	<hr/> \$201,000,000	<hr/> \$551,500,000

And there is every reason to suspect that these three jobs may exceed this \$551 million dollar figure by 25 to 50 millions of dollars.

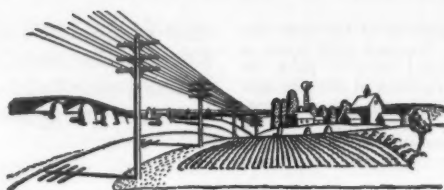
So many things have been going on in the last three years that it is worse than a three-ring circus. The business or professional man cannot possibly know what is being done or how much it is costing. The writer has visited every one of these projects. He was given every opportunity to see all parts of the work with the engineers in charge. He has nothing but praise for the design and the construction work. But there are other aspects of these jobs in which all of us, as citizens, are vitally interested.

This is the story that the writer has gathered as to that very important aspect—the cost that the country is finally committed to by the hasty approval of three jobs, two of which might be described as building great monuments in the desert.

Townsend on Government in Business

"My attitude is in accord with National Association of Manufacturers that government should keep hands out of private business management. The government has never shown an efficiency in business to be envied or emulated by business men. Manufacturers are seemingly missing vital point in their effort to restore prosperity. They make no provisions for an increase of buying power on part of general public. Unless this is done, all efforts to restore prosperity will fail."

—DR. FRANCIS E. TOWNSEND,
Author of the Townsend Plan.



New Acres and Power

THE Federal Bureau of Reclamation which since 1902 has been engaged in the work of irrigating arid lands in the West is about to become a factor in hydroelectric generation.

By WILLIAM E. WARNE

THE Bureau of Reclamation, which for thirty-four years has been the principal agent engaged in the work of irrigating new areas in the arid West, is about to become a factor in the field of hydroelectric power generation.

While 22 hydroelectric plants had been constructed on 13 of its 29 operating projects, the amount of power produced up to date, although not altogether insignificant, has been small. With installation of a battery of four 82,500 kilovolt-ampere generators now in progress at the Boulder dam power house on the Colorado river, the position in this field is about to be changed.

Congress established the Bureau of Reclamation in 1902 at the urging of Theodore Roosevelt and as a part of the great conservation program he sponsored as President. Its purpose was to invest the revenue from the sale of public lands in irrigation projects which would help the arid and semiarid public-land states to develop. The cost of the projects was to be repaid into a revolving fund over a peri-

od of years from the wealth created by the irrigation.

Blighted by a deficiency in natural rainfall, little growth of a sound and permanent character could be expected without irrigation in a vast region occupying fully one third of the territory of the United States. The rainfall ranges between 3 and 20 inches annually between the 100th meridian and the Pacific ocean, except on the crest of mountains and in a narrow strip along the coast between San Francisco bay and the Canadian border. Twenty inches is insufficient to sustain an intensive agriculture and 3 inches will not sustain life.

ANY civilization, to advance beyond the simplest pastoral stage in such a region, must turn to irrigation. The Indians in prehistoric times practiced irrigation in parts of this area whenever pueblo existence developed out of their primitive civilizations. The early Spanish missionaries irrigated the fields surrounding their missions during the year of their establishment. The Mormons watered

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the Utah desert in order to found their colony in the basin of the Great Salt lake in 1847. The 49'ers, many of them, found it more profitable to use the water in the Sierra Nevada streams to irrigate the valleys than to pour it through their sluice boxes once disappointment had cured their gold fever.

With water for only a small fraction of the million of acres of fertile lands available, through the hurried pioneering era the great contest was to claim and use the water. It was only natural that all the cheap and easy diversions from western streams were made quickly. It is not surprising that in many cases unregulated water supplies were overdeveloped by promoters more interested in the sale of land than in the welfare of the settlers. By 1902, private interests had exhausted their abilities to provide additional irrigation works. Potential developments then remaining, with few exceptions, were too costly to be financed privately. However, there was a critical need for construction of storage dams for regulation of water supplies for expansion of irrigated areas, if the population of the West were to increase and if its growth were to be encouraged.

FACED by this situation, Congress adopted reclamation as a national policy. It set up the reclamation revolving fund. It set up the Bureau of Reclamation on a business basis, with instructions to levy the cost of new projects against the land and to require repayment without interest in periods which have been lengthened from the original ten to the present forty years. In the operation of this

law the Bureau has spent \$228,000,000 and of this amount \$46,000,000 has become due for repayment to the reclamation fund from contracting water users. The water users have repaid 99 per cent of that which has become due.

Through this expenditure, the Bureau has created in excess of \$1,000,000,000 in taxable property in 15 western states, and has brought into existence homes for about 700,000 persons now living on farms and towns on its projects. It supplies water to about 2,800,000 acres. The benefit of this activity to the western states, and hence to the nation, was illustrated most dramatically in 1934 when a drought of unprecedented severity reduced the rest of the arid and semiarid region to a dust pan, leaving only the oases of irrigated areas to avert complete disaster.

In the first instance little thought was given to the possibilities for development of hydroelectric energy which inevitably were to be created by construction of these projects. Water stored in a reservoir must fall to a lower level en route to the land it is to irrigate, and for this reason most of the Bureau's projects have potential power.

IN the course of construction of its very earliest projects the Bureau built its first power plants. They were small, and were designed to provide power during the construction period, thus to reduce costs. For example, the first installation was on the Salt river project in Arizona in 1906 for the purpose of providing power for the construction of Roosevelt dam. The Spanish Fork plant on the Straw-

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berry valley project in Utah was built to furnish power for the drilling of Strawberry tunnel, and the Lingle plant on the North Platte project in Wyoming was constructed to supply energy for electric draglines at work excavating canals of the Fort Laramie division. The Lingle plant saved 11.25 cents a yard on 800,000 cubic yards of excavation by making it possible to use electrically operated equipment.

The second type of power development undertaken was to provide energy for pumps used in the irrigation system or used in draining lands of the project. Plants of this type were designed as a part of the waterworks. One example of such a plant is the Siphon Drop plant on the Yuma project in Arizona. It was completed in 1926. It develops about 1,000 kilowatts under a 10-foot head. Prior to its construction the Yuma and Yuma Auxiliary projects had been purchasing power for pumping purposes at an average cost of about 2.8 cents per kilowatt hour, whereas power for the project now is obtained from this small plant at an average cost of less than 0.8 cents per kilowatt hour.

WITH either type of power development opportunities arose for the sale of power for commercial purposes. Usually the demand was suffi-

cient to require increasing the plants to the maximum size that could be operated with the water available and consistent with irrigation needs.

Before investigating in detail these early power developments on reclamation projects, a recent and vastly more important type should be introduced. It is epitomized by Boulder dam on the Colorado river. It is the project in which power generation deliberately is included as a major purpose, and the sale of power is counted upon to repay or to contribute largely toward repayment of the cost of construction. While projects in this class are, perhaps, dependent upon power generation and sale for their existence, since otherwise they could not be financed, they are not "power projects." In each case they are something more. In each case power remains a by-product of the primary conservation objectives, water supply, and river regulation.

Boulder dam, of the Boulder canyon project, Kennett dam, of the Central valley project in California, Grand Coulee dam, of the Columbia basin project in Washington, and Seminole dam, of the Casper-Alcova project in Wyoming, four members of the third group of reclamation projects, can best be described as multiple-purpose dams. In each case they are the keystone of a comprehensive pro-



Q "It is not surprising that in many cases unregulated water supplies were overdeveloped by promoters more interested in the sale of land than in the welfare of the settlers. By 1902, private interests had exhausted their abilities to provide additional irrigation works. Potential developments then remaining, with few exceptions, were too costly to be financed privately."

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gram for use of a major water resource.

JUST as irrigation development in the West reached the point of 1902 where private capital could no longer finance it because of the cost of the waterworks, so it has reached a point where it is no longer possible in an increasing number of cases to assess the entire cost of the waterworks against the land to be improved with any expectation that the cost can be repaid. Fortunately for the future of the West, it no longer is necessary that the entire cost be assessed against the land. The great dams now needed in these projects are capable of producing hydroelectric energy as a by-product of their principal function—regulation of large and erratic rivers for flood control, silt control, irrigation, city water supply, and navigational improvements. The by-product is capable of paying all the excess cost with money left over.

The Bureau sells its power in blocks, or, as at Boulder dam, sells it in terms of falling water even before it is generated. Purchasers include municipalities, water users' organizations, and utility companies. It has been the policy of the Bureau from the first to turn its projects over to the beneficiaries for operation of all phases as soon as possible after completion. This policy will govern the operation of the power plant at Boulder dam.

WHILE power developments on reclamation projects in the beginning may have had Topsy-like histories, just growing from such unpremeditated steps as those taken to reduce construction costs of Roosevelt

dam and the North Platte canals, in recent years the power development has been planned as carefully as the engineering structures themselves. This seems a logical evolution.

"Combination of irrigation and power obviously brings about a double use of water and thus increases the value and overall efficiency of that water," John W. Haw and F. E. Schmitt, serving as an independent commission to investigate the efficacy of the Federal Reclamation policy, reported to Secretary of Interior Harold L. Ickes. "Full development of power possibilities is therefore desirable in the public interest."

Despite general acceptance of this principle in recent years, there has been no precise and general answer to the question: "Who is entitled to the profits of these power plants once their cost has been repaid?"

Mr. Haw and Mr. Schmitt said, "It would seem more broadly equitable to hold that the power value survives as a property of the general public."

This conclusion was based on the contention that although efficiency dictated joint development of power and irrigation, the two functions should be considered separate although complementary enterprises, the cost of the project divided equitably between them and their operation segregated. Messrs. Haw and Schmitt would have the revenues go to the government when the cost of the power plant has been returned.

CONGRESS has spoken several times in this regard. In 1924 it passed a bill which provided that when a project is turned over to the water users for operation and maintenance, the net



Use of Water as Major Resource

"BOULDER dam, of the Boulder canyon project, Kennett dam, of the Central valley project in California, Grand Coulee dam, of the Columbia basis project in Washington, and Seminole dam, of the Casper-Alcova project in Wyoming, four members of the third group of reclamation projects, can best be described as multiple-purpose dams. In each case they are the keystone of a comprehensive program for use of a major water resource."

revenues should be credited annually; first, on account of project construction charge; second, on account of project operation and maintenance charge; and, third, as directed by the water users.

Later special legislation, supplementing this act, directed that the net power revenues on certain projects be applied; first, to repayment of the cost of the power system; second, to the repayment of part or all of the cost of special irrigation features; and third, to the reclamation fund.

In the Boulder Canyon Project Act of 1928, Congress required sale of power to repay the cost of Boulder dam and power plant with interest at 4 per cent in fifty years. No interest is involved on projects constructed under the reclamation law.

The policy favored by the Bureau of Reclamation is: that the power profits should be applied first to repayment of the construction cost of the

power plant and system; second, to aid in repayment of the construction cost of the dam and other structures which make possible the power development; and, third, to be covered into the reclamation fund to be used with other moneys in that fund in the construction of additional works.

GENERALLY speaking, going back for a moment in the history of these projects, where a power plant was built to aid in the construction of a reclamation project, its cost was included as a part of the total cost of construction. Repayment contracts on these projects, therefore, include the cost of such power plants. It was natural for the water users to take these plants over, sell the power to farmers living along the main canals where transmission lines had been built during the construction period, and to use the net revenues to assist in repaying the cost of their projects.

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Where the plants were built to furnish power for pumps which were a part of the waterworks, it generally was found there was a salable surplus. The Minidoka power plant on the Minidoka project in Idaho was an early example of this type. It had a capacity of 10,000 kilowatts, of which 8,000 were used during the irrigation season to operate pumps and the surplus was sold to project towns and mutual companies serving rural districts for commercial distribution. The power revenue of this project is being used by the irrigation interests for purchase of additional storage, increasing the water supply and power development, and drainage, and for payment of annual construction charges.

UNDER the provisions of the Act of 1924, mentioned previously, a project fortunate enough to have fine power possibilities might prove a gold mine to its water users, although they had not turned a hand to make it so. The privilege of homesteading a farm under such a Federal canal included the right to a share in a profitable power business. The water users could pocket the power revenues when the project was paid for. Under later acts, the power-favored projects obtained some advantages over projects not so lucky, but they were reduced greatly and the revenue began returning to the reclamation fund.

It seems likely, with the Boulder Canyon Project Act as a possible guide, that in the future the government will require net power revenues from reclamation projects to return to the government for use in additional developments.

Let us turn briefly to Boulder dam, its power house, and the manner in which the power revenues there are to be applied. In the power house at Boulder dam 15 generators of 82,500-kilovolt-ampere capacity and two of 40,000 kilovolt amperes will be installed. The power house will have a rated capacity of 1,835,000 horsepower, which far exceeds the capacity of other noteworthy plants, as, for example, Dnieprostroy (U. S. S. R.) 750,000 horsepower and Niagara (U. S.) 452,500 horsepower. The power from the Boulder plant is allocated as follows: 18 per cent each to Arizona and Nevada; 36 per cent to the metropolitan water district of southern California; 13 per cent to the city of Los Angeles; 6 per cent to smaller municipalities, and 9 per cent to the Southern California Edison Company and other utilities.

FIRM power is sold to the purchasers as falling water at 1.63 mills per kilowatt hour measured in terms of energy at transmission voltage. Dump power, all of which has been allocated to the metropolitan district for pumping purposes, is sold at half a mill. By selling the power as falling water, the purchasers are required to operate and maintain the power house. This will be done by the city of Los Angeles and the Edison Company for all the purchasers.

The income from Boulder dam power during the first year of full operation will be \$7,057,900 for 4,330,000,000 kilowatt hours of primary energy and \$775,000 for 1,500,000,000 kilowatt hours of secondary energy. In fifty years the income will have been reduced to \$6,550,000

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annually because of a gradual decrease in water available for generation purposes due to expected upstream development.

In the next half century, \$361,000,000 will be received from sale of power at the present rates at Boulder dam, creating a surplus of \$166,500,000 after repaying with interest the cost of the dam and power plant. Arizona and Nevada each will receive \$31,200,000 of this surplus as payment in lieu of the right to tax the property. The remaining \$104,000,000 will be used by the government as follows: \$37,500,000 will go to repay with 4 per cent interest an allotment of \$25,000,000 of the cost of the project which is charged to flood control; and \$66,500,000 will be used as Congress directs in further development of the Colorado river.

IT is necessary again to call attention to the fact that Boulder dam was planned primarily as a means of regulating a dangerous river, otherwise an inaccurate impression that it serves a single purpose might be gained from the foregoing.

For thirty years alternate floods and drought levied a toll of many millions on the fertile irrigation settlements below Boulder dam. The outcry which arose from Imperial valley, which in 1906 was all but destroyed by the river, first centered

national attention on the problems of the Colorado basin. Here was a winter garden of more than 500,000 acres which actually had been created out of a desert as dry and perhaps more forbidding than the Sahara. Crops valued at \$100,000,000 have been harvested in a single year in the California valley. The Federal government did not develop the Imperial valley, but it built a project at Yuma, Arizona, across the river. Lying below sea level and 200 feet below the Colorado river's bed, the Imperial valley was in constant danger of inundation as a result of the vagaries of the river. Each year its great spring flood threatened life and property and each year its low flow in the late summer and fall endangered crops. This empire is indebted to Boulder dam which has forever saved it from flood and drought through regulating its water supply.

THE dam also makes possible, through regulation of the stream, provision of a supplemental water supply for the cluster of cities at Los Angeles. Without regulation, diversion of the water needed for future growth would have been impossible. Without a source of cheap power the metropolitan water district could not have undertaken to carry its water across 249 miles of desert and over a mountain range for their use.



Q " . . . Congress adopted reclamation as a national policy. It set up the Bureau of Reclamation on a business basis, with instructions to levy the cost of new projects against the land and to require repayment without interest in periods which have been lengthened from the original ten to the present forty years."

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Today there are 3,000,000 people in the area benefited by Boulder dam. Through conservation of this area's water supply, the Colorado river, Boulder dam has made it possible to double that population.

Power manufactured at the dam is expected to play a large rôle in this new drama of building the West. It will provide comforts for the new population and turn wheels for their livelihood.

What Boulder dam is to the Southwest, Kennett dam will be in the Central valley of California; Grand Coulee dam will be to the Northwest and Seminole dam to its vicinity in Wyoming. Kennett dam will supply between 330,000 and 400,000 horsepower to the northern California power market while regulating the Sacramento river and performing a most important function in a geographical redistribution of the waters of central California. Seminole will store the water of the North Platte river for use on the Casper-Alcova project, meanwhile generating 42,000 horsepower of electric energy for its electrification.

THE high dam proposed as the ultimate development at Grand Coulee will have a power house of a rated capacity of 2,500,000 horsepower, and will serve as the keystone of the plan for complete development of the Columbia river and development of the Columbia basin irrigation project. It will create homes for almost half a million people where none now exist.

But these are the future developments, the projects just now being transferred from blue prints to con-

crete and steel. At present none of their generators are in operation, although the first of the battery at Boulder dam soon will be humming.

The total hydroelectric production of Federal reclamation projects in 1935 was 349,523,772 kilowatt hours, of which 257,657,345 kilowatt hours were sold. The rest was used in pumping on irrigation systems and like purposes.

Plants in operation on Federal projects were: Boise project, Idaho, Black Canyon plant with a capacity of 10,000 kilovolt amperes and Boise river plant with a capacity of 1,875 kilovolt amperes; Grand valley project, Colorado, Grand valley plant, 3,750 kilovolt amperes; Minidoka, Idaho, project, Minidoka plant, 10,000 kilovolt amperes; North Platte project in Wyoming and Nebraska, Guernsey plant, 6,000 kilovolt amperes, and Lingle plant, 1,750 kilovolt amperes; Rio Grande project, New Mexico and Texas, Elephant Butte plant 150 kilovolt amperes; Riverton, Wyoming, project, Pilot Butte plant, 2,000 kilovolt amperes; Salt river, Arizona, project, Roosevelt plant, 19,250 kilovolt amperes, Horse Mesa plant, 33,300 kilovolt amperes, Stewart Mountain plant, 13,000 kilovolt amperes, Mormon Flat plant, 8,750 kilovolt amperes, Cross Cut plant, 5,250 kilovolt amperes, South Consolidated plant, 2,000 kilovolt amperes, Arizona Falls plant, 1,060 kilovolt amperes, and Chandler plant, 600 kilovolt amperes; Shoshone, Wyoming, project, Shoshone plant, 7,000 kilovolt amperes; Strawberry valley, Utah project, Spanish Fork plant, 1,000 kilovolt amperes; Yakima, Washington, project, Prosser plant,

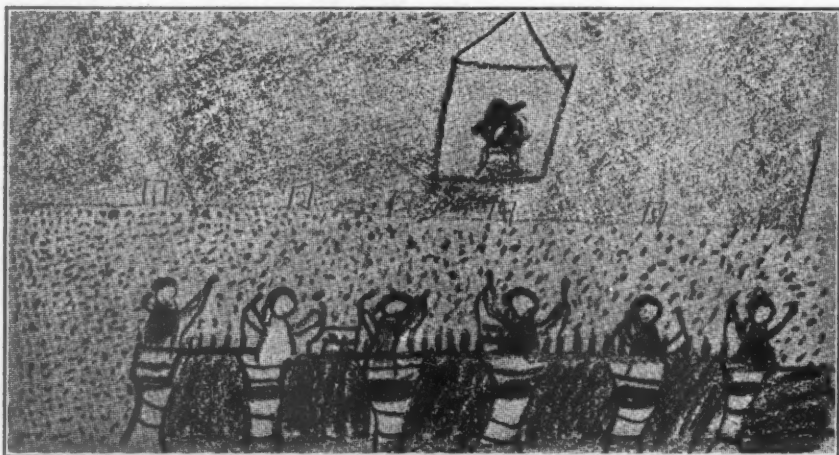
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3,000 kilovolt amperes, and Rocky Ford plant, 187 kilovolt amperes; and Yuma, Arizona, project, Siphon Drop plant, 2,000 kilovolt amperes.

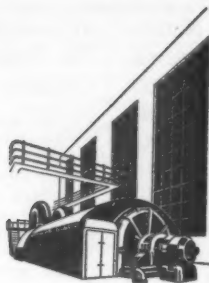
THE Bureau of Reclamation constructed but one of the plants on the Salt river project, the Roosevelt plant. When the project was taken over by the Salt River Valley Water Users Association, the power proved so attractive to the people of the project that they bonded themselves to enlarge the plant to construct Horse Mesa, Stewart Mountain, and Mormon Flat dams in series below Roosevelt dam in order to develop additional power possibilities, and to build plants which last year had an output of 249,045,197 kilowatt hours. The amount of power which can be produced by these plants is dependent upon the water supply available during

each year. The primary purpose of conserving this water is irrigation. The water users, who are in this case the power producers, are farmers. If to release water from their dams to the turbines will endanger the irrigation supply because of a deficiency in the winter's snows, it is retained for irrigation. Thus the output of the Salt river plants vary with the vagaries of the seasons.

Perhaps this situation on the Salt river project illustrates as well as possible the place of power on Federal reclamation projects. It is a by-product, albeit a very valuable one, of water conservation. Its development, where possible, is dictated in the interest of the public because it increases "the overall efficiency" of the water, the resource for conservation of which the Bureau of Reclamation was created.



After the pupils in the second grade of a school at Chevy Chase, Washington, D. C., suburb, visited a central telephone office they were asked to express in a drawing their impressions of the visit. One of them, Ralph Williams, handed in the above. Asked about the picture on the wall, he said: "Oh, that's a picture of Alexander Graham Bell which wasn't there, but I thought it ought to be, so I put it in."—*Transmitter*.



Municipal Electric Plants and Unemployment

Cost per man-year on local power projects financed by Federal Public Works Administration is found to be much greater than other types of construction.

By GEORGE E. DOYING

THE cost of labor and materials per man-year (one man working one year or twelve men working one month) for municipal electric plants financed by the Public Works Administration is approximately $2\frac{1}{2}$ times as great as the average for all types of non-Federal PWA projects.

The net, unrecoverable cost to the Federal government of municipal electric projects, representing the grants made to local public agencies from the public works funds, is 238 per cent or 220 per cent of the average for all types of projects, depending upon whether the grant is 30 per cent of the cost of labor and materials, or 45 per cent of the total cost of the project.

Stating the same matter in dollars: The total cost per man-year for labor and materials on non-Federal PWA projects, based on 2,370 completed

projects having a total estimated cost of \$225,476,377, was \$2,408. For 23 electric power projects (excluding water power) the comparable cost was \$5,729. Dealing with power plant construction alone, as distinguished from distribution systems, the man-year cost of labor and materials on 19 projects was \$6,359.

Considering the same 2,370 projects, the cost to the government of providing one year's work for one man was \$722 when a 30 per cent grant was made; for power plants this cost was \$1,719. On the basis of 45 per cent grants, all projects cost the government \$1,391 per man-year; power plants, \$3,060.

These figures are not derived by tricky manipulation of statistics. They come directly from an authoritative source—none other than Harold L. Ickes, Federal Emergency Administrator of Public Works, Secretary of

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the Interior, chairman of the National Power Policy Committee, etc., etc. They may be found in Exhibit V submitted by Mr. Ickes on May 18, 1936, to a subcommittee of the Committee on Appropriations of the United States Senate. The administrator was trying to show the subcommittee why a new appropriation should be made for the PWA. He did not, of course, dwell upon the high cost of power plants in comparison with other projects.

THE accompanying tabulation (p. 476) is a partial reproduction of Exhibit V as submitted by Mr. Ickes. The exhibit shows that 2,370 completed projects provided 72,936 man-years of employment. This is an average of $30\frac{1}{2}$ man-years per project. Similarly, 330 street and highway projects provided an average of 36 man-years of employment; 378 sewer projects, average 40 man-years; 589 water systems, average 19 man-years; 569 educational buildings, average 33 man-years; 81 hospitals and other institutions, average 51 man-years; 6 gas plants, average $27\frac{1}{2}$ man-years. But the 23 completed electric power projects provided an average of only $11\frac{1}{2}$ man-years of employment.

Of course, in the promotion of local public works for the relief of unemployment it was natural that the program should include many types of projects, some providing more work, in proportion to cost, than others. The primary purpose of the National Industrial Recovery Act of 1933, which included, in addition to the late unlamented NRA, the Federal Emergency Administration of Public Works, was generally understood to be the relief

of unemployment by various methods. The Declaration of Policy adopted by Congress in this act recited that—

A national emergency productive of widespread unemployment and disorganization of industry, which burdens interstate and foreign commerce, affects the public welfare, and undermines the standards of living of the American people, is hereby declared to exist. It is hereby declared to be the policy of Congress to . . . reduce and relieve unemployment. . . .

Furthermore, § 203 (a) of the act provides that—

With a view to increasing employment quickly (while reasonably securing any loans made by the United States) the President is authorized and empowered—

to make grants to states, municipalities or other public bodies in furtherance of the public works program.

IT seems more than passing strange, then, to find Administrator Ickes on August 1, 1935, after two years of experience in which he might have learned the relative values of various types of projects for the relief of unemployment, issuing the following statement:

For the purpose of giving special and expeditious attention to publicly owned power plants, Public Works Administrator Harold L. Ickes today created a power division within the Public Works Administration. The administrator's order setting up the new division stated that preference shall be given in all PWA state offices to the study of power projects.

It is perhaps less strange—at least, it is more understandable—to find the administrator again placing power projects in a preferred class when efforts were made to hasten local activities on work-relief projects.

President Roosevelt, on August 26, 1935, addressed letters to all Federal agencies concerned, telling them that applications for allocation of funds from the \$4,880,000,000 appropria-

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The Drop in Power Deal Capital Expenditures

"THE electric power industry of the United States in the five years 1926-30 made capital expenditures averaging \$843-180,000 annually, reaching a peak in 1930, when these expenditures amounted to \$960,889,000. In 1934 they dropped to \$170,000,000. Much of the decrease, of course, was due to the general depression, but a considerable part was caused by the New Deal's antagonistic attitude toward the utilities."

tion under the Emergency Relief Appropriation Act of 1935 must be filed not later than September 12th, and contracts for the work must be awarded and signed on or before December 15, 1935.

SUBSEQUENTLY, Administrator Ickes announced that projects not under way by December 15th would be canceled forthwith and recommendation made for allocation of the money to other communities in a position to meet the requirements. Mr. Ickes was very definite about the matter. Said he:

Any community which is not ready to meet the conditions laid down by the President must be dealt with summarily. No excuses can be accepted by the PWA. . . . I have told the PWA state directors . . . that we must treat delays with ruthlessness. We can well afford to do this because PWA has on file thousands of good projects which can and will be substituted for projects in communities which lag and retard the program.

But hold!

Some municipalities had run into legal snags in connection with proposals to build electric plants to be operated in competition with privately owned systems which had long served the communities. In certain instances the municipal corporations had apparently exceeded their constitutional or statutory authority to issue bonds. In others, violation of the local utility's franchise rights was indicated. In still other cases, different issues were presented. Be that as it may—

No excuses can be accepted by the PWA.

Nevertheless, Mr. Ickes, on October 31st, came to the rescue of these municipal power plants by issuing an order exempting them from the decree that all work-relief projects must be started by December 15th. The order was limited to those projects "unfairly attacked" by suits then pending in courts of competent jurisdiction.

Total Cost Per Man-Year of Non-Federal PWA Projects

ALSO COSTS TO FEDERAL GOVERNMENT ON BASIS OF

- (1) Grants of 30% of cost of labor and materials
 (2) Grants of 45% of total cost

BASED ON 2,370 COMPLETED PROJECTS HAVING A TOTAL
 ESTIMATED COST OF \$225,476,377, APRIL 13, 1936.

(From Exhibit V, submitted May 18, 1936, by Harold L. Ickes, Federal Emergency Administrator
 of Public Works, to subcommittee of Committee on Appropriations, U. S. Senate,
 during consideration of H. R. 12624, first deficiency appropriation bill, 1936.)

	Number of projects	Total estimated costs of projects	Average cost of projects	Man-hours of employment	Man months of employment	Man-years of employment	Total cost per man-year of employment	Cost of labor and materials	Cost per man-year for 30 per cent of total estimated cost	Cost per man-year for 45 per cent of total estimated cost
Grand total (all types)	2,370	\$225,476,377	\$95,138	94,100,991	875,227	72,936	\$3,091	\$175,622,622	\$2,408	\$722
Streets and highways (total)	330	31,130,510	94,335	23,596,618	142,750	11,896	2,617	23,955,902	2,014	604
Sewer projects (total)	378	38,720,769	102,436	18,669,124	183,683	15,306	2,530	29,110,643	1,902	571
Water systems (total)	589	39,932,120	67,796	13,429,314	138,623	11,552	3,457	30,318,120	2,624	787
Educational buildings (total)	569	62,518,089	109,874	20,829,082	225,430	18,786	3,328	50,240,943	2,674	802
Hospitals and other institutions ..	81	15,419,092	19,036	4,536,202	49,924	4,160	3,707	12,111,429	2,911	873
Gas plants	6	576,100	96,017	195,224	1,987	166	3,470	405,305	2,442	733
Electric power, excluding water power (total)	23	1,808,792	78,643	302,408	3,193	266	6,800	1,253,973	5,729	1,719
Electric distribution systems ..	4	145,164	36,276	53,049	557	46	3,156	125,007	2,718	815
Power construction, not water	19	1,663,628	87,559	249,359	2,636	220	7,562	1,352,966	6,359	1,908
										3,403

MUNICIPAL ELECTRIC PLANTS AND EQUIPMENT

Thus Mr. Ickes virtually decided these suits without recourse to a trial of the issues.

FORGOTTEN was the need for haste in providing work for the unemployed. Ignored were the "thousands of good projects" ready to be substituted. The municipal power plants must be built though men stand idle in the midst of emergency.

What's a mere unemployment emergency when public ownership of the electric power industry can be advanced?

Of course, as has been stated, this attitude on the part of Mr. Ickes and the President, who approved the exemption order, is understandable. It is human to resent interference with anything one plans to do. It was not at all difficult for the New Dealers to conjure up a "power trust plot"—ignoring the obvious fact that the respective utility managements would be derelict in their duty to their stockholders if they failed to take proper legal steps to safeguard the integrity of their properties.

The result, of course, was that unemployment relief was abandoned in so far as it was involved in the building of publicly owned electric plants.

IN fairness to the PWA it must be conceded that the worth of its efforts to provide work cannot be measured solely by the direct labor required on projects, be they electric plants or other types of construction. As Mr. Ickes told the Senate subcommittee:

... it should be clear that in computing the actual man-year cost to the Federal government consideration should be given to the total number of men put to work by the construction of projects, no matter whether such men are employed at the sites

of the projects or away from the sites.

If we take this approach to the problem it is clear that the man-year cost to the Federal government is much less than the figures which I have just stated. To arrive at a more accurate figure of what it costs the Federal government to create and maintain employment by the Public Works Administration projects, the outlay by the Federal government should be distributed among all persons given employment either directly or indirectly by the construction of a project. It is not fair to compute man-year costs based exclusively on direct labor. These facts must be taken into consideration whenever comparisons are made between the relative man-year cost on different types of projects financed by the various agencies of the Federal government.

This statement, obviously, was not intended as a defense of the comparatively excessive man-year cost of power plants, but was made to refute claims then prevalent (May, 1936) that more work, per dollar spent, was provided by the Works Progress Administration's "boondoggling" than by the PWA.

IN connection with another matter, however, Mr. Ickes has had prepared an exhibit to show the amount of indirect labor created by municipal electric plant projects. This exhibit was made by the Bureau of Labor Statistics, generally acknowledged to be an unbiased and efficient fact-finding agency. As used by Mr. Ickes, it has two weaknesses which will be discussed later.

The procedure followed by the Bureau of Labor Statistics in computing the man-hours of indirect labor required for a given project, or group of projects, is interesting. The most complete detailed study so far made deals with the manufacture of steel. Other basic industries are now being treated in similar fashion.

The Bureau goes all the way back to the land, first determining the man-

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hours required in mining one ton of iron ore. The various processes in the making of steel are then taken up one by one and the man-hours calculated for each major step and for each of certain important groups of finished steel products.

To illustrate in detail the method followed, consider the bituminous coal, in the form of coke, used in producing pig iron, one of the principal basic materials used in producing steel. The Bureau explains its procedure in this way:

In 1933 the output of bituminous coal averaged 4.78 net tons per man per day and the average time worked by the soft-coal miners during the year was 8.07 hours per day. The output per man per hour was thus 0.592 tons, and 1.68 man-hours were required to mine a ton of bituminous coal. As 2,875.7 pounds of coking coal (1,935.7 pounds of coke) were consumed per gross ton of pig iron produced in 1933, an allowance of 2.43 man-hours was made for the production of the coal necessary to produce a ton of pig iron. In converting the coal into coke necessary to produce a ton of pig iron the labor requirements range from 0.5 to 2 man-hours, but the average was 1.2 man-hours.

OTHER calculations were made to find the amount of labor involved in transporting the mineral raw materials from the mine to the blast furnace; the man-hours required for transportation of the coal used to make a ton of pig iron; another computation for carrying the fluxing material.

Thus at the end of the mathematical road it was found that the production of one gross ton of wire nails, for ex-

ample, requires 61.61 man-hours, divided as follows: Extraction, 7.48; transportation, 8.24; coke manufacture, 1.49; manufacture, 42.70; administration, 1.70.

Carrying this process onward, ever onward, the Bureau computed for the PWA the amount of indirect labor, stated in man-hours, required to place on the sites the materials used in construction work on six small municipal electric plants, one job being a short transmission line.

(Incidentally, an amusing circumstance took place in connection with that same transmission line. It was constructed by a small town at a cost of \$7,100, which sum was provided by the PWA—a loan of \$5,000 and a grant of \$2,100. Soon after the work was completed the town sold the line, presumably for not less than \$7,100, to the utility serving the community. Apparently, therefore, the town pocketed at least \$2,100 in cash, a gift from a generous government.)

THESE six municipalities received grants aggregating \$150,900, and four of them received loans totaling \$251,300. The cost of the completed projects was \$563,356. The exhibit prepared for Mr. Ickes shows that labor on the site amounted to 85,529 man-hours. Labor off the site, designated as mine, transportation, and factory, is computed at 380,000 man-hours.



Q "THE primary purpose of the National Industrial Recovery Act of 1933, which included, in addition to the late unlamented NRA, the Federal Emergency Administration of Public Works, was generally understood to be the relief of unemployment by various methods."

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Undoubtedly power plant construction requires a greater proportion of fabricated materials than some other types of projects, such as sewers, water systems, etc. The same degree of difference does not exist, however, as between power plants and educational buildings, hospitals, etc. Yet the cost per man-year for labor and materials on an educational building (Mr. Ickes' Exhibit V) was \$2,674 and on a hospital, \$2,911. The comparable power plant cost was \$5,729.

One of the weaknesses of the PWA exhibit lies in the fact that no figures are available for a comparison of the indirect labor requirements on different types of projects. Conceding the accuracy of the Bureau of Labor Statistics calculation that indirect labor on power-plant projects is nearly $4\frac{1}{2}$ times as much as direct labor, what is the ratio on other types of projects which call for 3 times as much direct labor?

THE other weakness is found in the crediting to the unemployment relief program of the full amount of indirect labor as computed by the Bureau of Labor Statistics. For accounting purposes, and possibly for some other uses, such figures might be of value. But to set them up as proof that so much work has thus been provided for the unemployed, or even that unemployment has thus been prevented, is going a bit too far.

Take the item of transportation. The exhibit in question indicates that a little more than 25 per cent of the 380,000 man-hours of labor off the site was applied to transportation.

The Bureau's method of determining the amount of transportation labor in the case of steel was based on carriage by rail and water. It seems improbable that any extra trains or ships were needed to transport raw materials or finished products to be used on PWA projects. Nor is it likely that any regular trips of these carriers would have been annulled but for PWA shipments. It would seem to follow, therefore, that no more men, and no fewer, were employed because of Federal financing of local public works projects.

The Bureau might as well have traced the locomotive, rails, and freight car back to the land, on the theory that they might not have been built except that they were destined to carry materials for PWA construction.

OF a different character is such an item as a piece of machinery for a power plant. It is built on specific order or, if taken from stock on hand, another is built to replace it. Hence there is a direct, calculable amount of labor involved, and this might properly be credited to the unemployment relief program.

The electric power industry of the United States in the five years 1926-30 made capital expenditures averaging \$843,180,000 annually, reaching a peak in 1930, when these expenditures amounted to \$960,889,000. In 1934 they dropped to \$170,000,000. Much of the decrease, of course, was due to the general depression, but a considerable part was caused by the New Deal's antagonistic attitude toward the utilities.



The Investor Looks at TVA

IN this article the author points out that the investor's opinion of the harmful influence of TVA on the private electrical industry is indicated by the higher return demanded on certain securities of the private companies in the TVA area over that demanded on similar securities in areas not affected by TVA.

By ERNEST R. ABRAMS

PERHAPS no single phase of the New Deal has provoked more controversy than has the Tennessee Valley Authority, created by congressional enactment in the spring of 1933 and approved by President Roosevelt on May 18th of that year.

The annual report of the Authority for its first fiscal year—that ended June 30, 1934—outlined its purposes in the following language:

The most immediate purposes of the Tennessee Valley Authority were to maintain and to operate the Wilson dam and power plant, to administer the fertilizer plants at Muscle Shoals, and to build the Cove creek (Norris) dam on the Clinch river. The more general purposes of the Authority are to promote the general defense, to further the proper use, conservation, and development of the natural resources of the Tennessee river area and related territory, to further agricultural and industrial development, and to promote the economic and social well-being of the people of that region.

Proponents of the Authority, largely New Deal officials and residents of the Tennessee valley, have been enthusiastic in their estimates of the benefits to be derived therefrom while

its most active opponents, largely public utility executives, have been equally as firm and sincere in damning the Authority as an opening wedge in a drive to socialize the electric utility industry through the application of a "rubber" yardstick. So loud has the fuss become that the voice of a third interested party, the present or prospective investor in the securities of private utilities in the Tennessee river area, has largely gone unheard. It might be worth while to pause for a moment and hear what the man who puts up the money has to say about the Tennessee Valley Authority. Before listening to him, however, certain comparatively recent actions and statements by those qualified to speak for the Authority should be mentioned.

ON January, 4, 1934, the Tennessee Valley Authority entered into a contract with The Commonwealth & Southern Corporation and Alabama Power Company, The Tennessee Elec-

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tric Power Company, Georgia Power Company, and Mississippi Power Company, wherein portions of the distributing lines owned by the Mississippi, Alabama, and Tennessee companies were transferred to Tennessee Valley Authority at prices considerably below the book values of the conveyed property. In commenting on these purchases, David E. Lilienthal, director in charge of power of the Authority, stated:

This agreement is a demonstration of the Authority's often expressed policy to carry out the mandate of Congress and yet avoid the destruction of prudent investment in privately owned public utilities. By the purchase of private utility property which was found to be useful, at prices which were fair but not more than they were reasonably worth, the Authority has avoided the necessity of building duplicating competing facilities, with consequent injury to the public investors in existing utility property. Had the power companies who are parties to this contract been unwilling to sell these facilities at a fair price, or had they insisted on payment for intangibles or "water," the Authority would have been under the definite mandate to construct duplicating facilities rather than submit to being "held up."

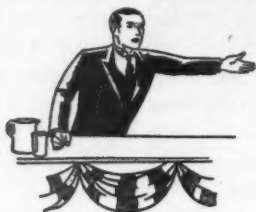
It is important to note, as the investor has, that the prices referred to as "fair" in the purchases arranged by this contract, were equivalent to about 65 per cent of the values at which these facilities were then carried on the books of the respective operating companies.

ALTHOUGH this contract was to run for five years, or until December 31, 1938, a provision was contained that if the Norris dam power plant was completed before October 31, 1938, the Authority might notify The Commonwealth & Southern Corporation of such completion, and this contract would then terminate ninety days after the receipt of such notification.

Electric energy having been successfully run between the Norris dam power plant and Wilson dam, the Authority on August 1st of this year announced that the Norris dam power house had been placed in operation and that it had notified The Commonwealth & Southern Corporation and its four operating subsidiaries that were parties thereto of such completion and had given notice that this contract would expire in three months.

The very low rates that have been prescribed by the Tennessee Valley Authority for the energy distributed over the acquired transmission lines are not the most serious threat to the operating electric utilities within the practical limits of transmission from the Authority's dams. Even though rates were reduced to the levels prescribed by the Authority, it is believed that all of these private utilities could cover fixed charges by reasonable margins with some equity in earnings accruing to the preferred and, in a few instances, to the common shares. The real threat to these private utilities within the sphere of influence of the Authority is its demonstrated intention of acquiring additional blocks of distributing facilities, some of which lie in the heart of the operating areas, and would render useless, to a considerable extent, much of the physical plant of these operating utilities.

SECTION 7 of this contract provided, in effect, that both the Tennessee Valley Authority and the private utilities that were parties thereto would respect each other's territorial rights and, with the termination of this contract, further inroads on the



CLEARLY, the voice of the investor has been heard. In his composite opinion which he has expressed through the media of market quotations, he has expressed his belief that the influence of the Tennessee Valley Authority is adverse to those private electric utilities whose service areas lie within transmission distance from any of its hydroelectric generating plants. . . ."

service areas of the private utilities may be expected. And yet today, with this contract still in effect, the investor sees about 2,100 miles of completed, and about 1,300 miles of partially completed or planned, transmission and distribution lines of the Authority covering a territory with around 2,400,000 inhabitants; he finds the Authority now has, or is soliciting, contracts to serve 22 cities in Tennessee, 11 cities in Mississippi, 7 cities in Alabama, and one city in Georgia; and he reads that a sizable and well-managed industrial concern refused to accept \$1,500,000 first and refunding bonds of The Tennessee Electric Power Company as security for the successful performance of a contract to deliver electric energy to it "because of the unfortunate competitive conditions surrounding" that company.

What does the investing public think about the Tennessee Valley Authority? Is it desirous of owning the securities of private electric utilities

whose service areas fall within the sphere of influence of the TVA? The answer is to be found in the appraisal it has placed, marketwise, upon those securities.

Section A of Table I is comprised of twenty-seven sizable bond issues of the ten major operating electric utilities in the Tennessee river area together with the quality ratings that have been assigned to each issue by one of the leading statistical organizations of the country, the last sale or the asked price for each issue on August 25th, and the investment return on each issue at these prices if held to maturity. Section B of Table I is comprised of the principal bond issue of each of thirty-five comparable electric utilities whose service areas are beyond the sphere of influence of TVA together with similar quality ratings, August 25th prices, and investment returns to maturity.

AN examination of both sections of Table I will reveal that while the

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purchase of one bond of each of the twenty-seven issues of the TVA-affected companies would have resulted in an average return of 4.97 per cent, the purchase of one bond of each of the thirty-five TVA-unaffected issues would have produced a return of but 4.62 per cent, a difference of 7.56 per cent in the size of the investment return.

If, however, the underlying issues of the ten TVA-affected utilities had been excluded from the portfolio and only the thirteen "top" issues had been purchased, then the average return to the investor would have been 5.21 per cent or about 12.75 per cent greater an investment return than could have been obtained, on the average, from the thirty-five TVA-unaffected issues.

Section A of Table II is comprised of nineteen preferred stocks of the same ten TVA-affected utilities whose bonds were contained in Table I, while Section B of Table II is comprised of the forty-five outstanding preferred stocks of the same thirty-five TVA-unaffected utilities, tabulated in Table I. One TVA-affected utility (Tennessee Public Service Company) and two TVA-unaffected utilities (Empire District Electric Company and Florida Power & Light Company) are currently paying no dividends on their preferred stocks

and have, therefore, been excluded from the averages. Three TVA-unaffected utilities (Iowa-Nebraska Light & Power Company, New York State Gas & Electric Corporation, and Wisconsin-Minnesota Light & Power Company) have no preferred stocks outstanding in the hands of the public.

Were an investor to have purchased one share each of these sixty-three preferred stocks on August 25th, he would have received an average return of 5.82 per cent on his forty-five TVA-unaffected stocks and an average return of 7.83 per cent on his eighteen TVA-affected stocks, or more than 34.50 per cent greater a return on his TVA-affected stocks than on his TVA-unaffected stocks.

Clearly, the voice of the investor has been heard. In his composite opinion which he has expressed through the media of market quotations, he has expressed his belief that the influence of the Tennessee Valley Authority is adverse to those private electric utilities whose service areas lie within transmission distance from any of its hydroelectric generating plants and if he is to buy their securities, he must be rewarded by an investment return of from 7.56 per cent to 34.50 per cent greater than is demanded of comparable electric utilities, beyond the influence of TVA, for the added risk he assumes.

Super Power from Cosmic Rays

ELECTRIC currents ranging from 10,000,000 to 100,000,000,000 volts are possible if the elusive cosmic ray can be captured and tamed, Professor A. H. Compton, world-famed University of Chicago physicist and Nobel prize winner, said in a recent interview.

So important has cosmic ray research become, Compton said, that present knowledge of its mysterious qualities and power has upset almost all theories regarding electro-dynamics.



Financial News and Comment

By OWEN ELY

"Showdown" Approaching on Unified Transit in New York?

HEARINGS began September 10th before the transit commission at New York city on the question of unification of all subway and elevated lines. The possibility that the commission, a state body, might spend some time in investigating the Seabury-Berle plan, thus deferring final adoption by New York city's board of estimate, seemed to be anticipated by representatives of the municipal administration. It was indicated that failure of the commission to act promptly might result in an attempt to seek termination of its authority. On the other hand, John J. Curtin, special counsel for the commission, indicated that time was required for thorough consideration of the plan, which involves "billions of dollars" and a 75-year financial contract.

Samuel Untermyer, former special counsel for the commission in connection with the 1931 plan and now representing Interborough and Manhattan Railway Co. stockholders, thinks that at least two years may be required to consummate the plan because of the need for new state and Federal legislation, court rulings, and "red tape." In this connection he asked that interest on the part of the purchase price be paid his clients begin as of next January 1st.

Jacob H. Haffner, chairman of a special committee of the chamber of commerce of the state of New York, has announced that it will present to the transit commission a special report prepared

by Dr. Lindsay Rogers of Columbia University, analyzing and endorsing the plan. Mr. Haffner stated that the city would secure an income of about \$28,000,000 from the properties to be acquired, against interest requirements of about \$18,300,000, leaving an annual cash gain of about \$9,700,000 exclusive of amortization. Moreover, he pointed out, increased realty values would benefit the city, following demolition of the elevated structures, and the city might also save some \$6,000,000 in cost of constructing the new Sixth avenue subway.

ON the other hand it is understood that the \$436,157,200 "price" to be paid for the combined traction properties under the proposed plan is only a minimum figure and might be increased substantially by Federal taxes on the "profits" accruing to the companies or security holders. Moreover, if the Federal government should insist upon an appraisal of the properties in order to determine these taxes, this might be a further cause of delay.

Mr. Haffner referred to the "economies to be secured from unified operation of the lines." While some savings should be effected it seems probable that they may be largely absorbed by the tendency to overstaff a municipal enterprise of this size, due to political considerations, as well as additional costs such as pensions, etc., for the rank and file of employees required under state and municipal laws.

Moreover, it should not be forgotten

that the city's independent subway is a veritable "white elephant." If the construction and operation of this line is any criterion of future city management of the unified system, taxpayers can hope for comparatively little in the way of profits. However, representatives of civic associations seem to favor the plan as the best remedy for a hopelessly tangled traction situation. It remains to be seen whether the transit commission will give its unqualified approval; otherwise the cause of unification may suffer a decided setback.

Proposed Pools of Federal and Private Power

THE administration has recently injected a novel suggestion into the power issue, possibly in an attempt to forestall adverse court decisions which might handicap the TVA-PWA program in the coming year or so. Basil Manly, chairman of the Federal Power Commission, in an address before the World Power Conference at Washington, proposed the idea of a "power pool" as a solution of the economic and political difficulties facing the industry. According to the *New York Times* the TVA, with the approval of President Roosevelt, has under consideration a plan for coöperation between private and Federal power interests in the Tennessee valley power area. Under such a plan the power developed by such Federal projects as Norris dam and by all privately owned companies would be pooled and transmitted for consumer use at uniform rates over lines operated by the TVA and the private power companies.

The present contract between TVA and the Commonwealth & Southern Corporation, which provides in a minor way for pooling of power, expires in November. The new plan would be much more comprehensive, although details are lacking. David E. Lilienthal, TVA director in charge of power, is reported in favor of the plan, while Chairman A. E. Morgan is said to pre-

fer confining the Authority's operations to a restricted area, in order to better facilitate development of yardstick rates.

Possible advantages of the proposal are said to be (1) elimination of power competition between private interests and the Federal government; (2) putting all municipal and private distribution plants and all industries on the same basis in the purchase of wholesale power; (3) simplification of the problem of municipal ownership and elimination of troublesome delays in the building of competing distribution systems, financing of which by PWA funds has been held up in the courts. If successful in TVA territory, the plan could be applied to Bonneville and other huge government power developments.

IT seems a little doubtful, however, whether private companies will welcome the pooling of their facilities with those of the government if, as indicated, rates are to be fixed on a wholesale basis much lower than the rates now charged by the companies—in other words, on a "yardstick" basis.

In TVA territory, opening of the Norris dam and completion of other projects now under way will doubtless result in a large amount of surplus power. Will the government expect to have this power fully absorbed in any arrangement for pooling, or will it share the available demand pro rata with the private companies? Or will the government sell power to the utilities when and as they need it, as is done by private utilities which have interconnected their systems for emergency transmission? According to views attributed to Mr. Lilienthal, the power pool or "grid" would take power from the *cheapest* available source "at any given time," by contract arrangement between the government unit and private companies, and would not require any special agency for its administration, since engineering and accounting work could be delegated by agreement. (Presumably, however, Federal power would usually be the cheapest because so large a part of the cost of Federal plants has been written

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off or diverted to "navigation and flood control".)

Meanwhile Federal Judge Gore at Cookeville, Tenn., has suggested a speedy hearing on the question of constitutionality of the TVA act. The TVA has contended that since its legal residence is in northern Alabama, the Tennessee court is without jurisdiction. Judge Gore holds that if the act is unconstitutional, any court has jurisdiction on the questions raised in the suit; while if it is constitutional, jurisdiction would be in Alabama on the question whether TVA has exceeded its authority under the act.

High Cost of Distributing Hydro Power

IN a recent article "Trends in Power Supply," L. W. W. Morrow, editor of the *Electrical World*, points out that the total capacity of all hydro plants is only about 22 per cent of our present power capacity, which amounts to about 51,000,000 kilowatts. He states that almost the entire capacity installed in the past decade has been in utility plants "built at the loads and in accord with economic facts. Yet at this time nearly 2,000,000 kilowatts of hydro power is being built by the Federal government and this is located at a distance from loads and in regions where industrial activity and population density are low. The assumption is that industry will go to the power and that hydro power is cheap power."

He points out, however, that the major consideration in locating industrial plants is the relation to markets, and the available local supply of labor on a reasonable wage-and-work basis. Cost of power (along with that of raw materials) is for most companies of secondary importance. Only for certain industries, such as those which have grown up around Niagara Falls, is power a dominant cost factor.

The power supply for leading industries has been built by integrating steam and low-cost hydro plants through the

use of interconnected high-voltage transmission lines. As more power is needed it can be most economically obtained by adding capacity to the steam plants and thereby reducing kilowatt-hour costs. It costs about $2\frac{1}{2}$ times as much, Mr. Morrow estimates, to transmit hydro power 200 miles as to transport coal the same distance to a local steam plant. The general trend "is toward the use of multiple, rather small, generating plants located at the load. . . . Under these conditions transmission is an economic means to utilize diversity and to reduce reserve margins rather than a delivery system for firm power over long distances."

IN Mr. Morrow's opinion there are many ways in which the cost of generating electricity at steam plants may be still further reduced, through more economical engineering set-ups, further development of the mercury-steam cycle, superimposing high-pressure units on existing low-pressure plants, use of by-product steam for heating, etc. Fuel-burning electric plants can now be built for about \$85 per kilowatt and the rate seems likely to be reduced in the near future to \$60-70, which compares with an average price of about \$250 per kilowatt of firm power as an average price for Federal projects now under way. He figures "busbar" power costs for the latter at about 6 mills per kilowatt hour as compared with $3\frac{1}{2}$ to 4 mills for fuel-burning plants. As he states, "most of the low-cost hydro sites in market areas have been developed. . . . Very careful studies are necessary to fix upon an economic way to use these new high-cost hydro developments. Possibly charging off much of the investment to flood control and navigation is one way out of the difficulty."

The President has recently stressed the need of decentralization of production. It seems evident that steam plants are, on a cost basis, much better adapted to a program of decentralizing industry than are the huge hydro projects which the administration has been sponsoring as part of its social welfare program.

FINANCIAL NEWS AND COMMENT

American & Foreign Power Company

American & Foreign Power, Inc., which is controlled by Electric Bond & Share Co. through ownership of a substantial amount of the junior securities, controls companies operating in thirteen countries. Some 932 communities, with a population of over 14,000,000, are served. The relative importance of interests in the various countries is indicated by the following analysis of 1935 revenues:

	Gross Revenues	Per Cent
Cuba	\$9,909,735	18
China	9,495,711	17
Brazil	9,274,655	17
Argentina	8,520,692	15
Mexico	6,442,700	12
Chile	5,276,841	10
Panama	1,637,042	3
Venezuela	1,380,520	2
Colombia	952,521	2
Guatemala	720,822	1
India	488,442	1
Costa Rica	470,160	1
Ecuador	267,829	1
Total Revenues	\$54,837,670	100

Electricity comprises about 84 per cent of total revenues, transportation 12 per cent, and gas, telephone, water, ice, and miscellaneous 4 per cent.

The company's rapid and continued growth during the depression, which is perhaps not generally realized, is indicated by an increase in kilowatt hours output for 1935 of nearly one third over 1929.

DURING the depression the company was affected not only by general business conditions, but also by the fall in foreign currency values. In the consolidated system statement, which reflects the equities of the parent company, the U. S. dollar equivalents of the accounts in each foreign currency have been computed monthly at an average of the daily exchange rates. The differences between these averages and the exchange values prevailing when earnings are finally transferred into U. S. dollars (or reinvested in the country

of origin) are absorbed in surplus. The company's record in the past decade is indicated as follows:

Calendar Years	Kw. Hr. Output (Millions)	Gross Revenues (Millions)	No. Times Charges Earned	Share Earnings on Common
1935	2,789	\$54.8	1.28	\$10.32*
1934	2,661	53.0	1.17	11.12*
1933	2,368	57.5	1.34	9.92*
1932	2,155	53.1	1.51	9.35*
1931	2,293	65.4	2.33	4.90*
1930	2,240	78.7	3.10	1.04
1929	2,099	63.7	4.45	4.01
1928		30.1	6.02	1.22
1927		20.0	2.10	0.69
1926		10.2	4.39	0.17

* Deficit.

For the twelve months ended June 30, 1936, system net (before exchange adjustments) amounted to \$3,476,161, against \$3,538,005 in the previous twelve months; and for the quarter ended June 30th, \$1,185,626 against \$1,138,046.

American & Foreign Power Co. during the past year has had difficulties with the Chilean authorities, which, however, are being gradually cleared up. The principal operating subsidiary in Chile was accused of sending exchange out of that country during the years 1932-5, contrary to the laws governing control of foreign exchange, and a fine of about \$2,100,000 was assessed against the company by the court of appeals of Santiago. Negotiations with the President of Chile resulted in an amnesty law being enacted, but difference of opinion regarding the interpretation of this agreement prevented its becoming operative, and meanwhile the company's appeal to the Supreme Court of that country has been pending. On August 13th it was reported that a complete accord had finally been reached between the government, the Compania Chilena de Electricidad Limitada, and the South American Power Co., all fines being canceled and permission granted to merge the operating properties. According to press reports the agreement provides for a large degree of local management, and earnings applicable to the "ordinary shares" (the company was

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originally a British concern) are to be allocated on a three-way basis to share owners, the government, and consumers, the latter portion being used for rate reductions. As indicated above gross revenue obtained in Chile amounted to about 10 per cent of system gross in 1935.

Future recovery of system earning power is obviously dependent on (1) the trend of South American exchange values; (2) the continued growth in the consumption of electricity, and (3) reduction of operating costs and fixed charges. The ratio of expenses and taxes to gross increased from about 49 per cent in 1929 to nearly 60 per cent in 1935, and fixed charges are now over double those of 1929.

POSSIBILITIES for expansion in Central and South America are indicated by the fact that these territories have only one third as many electric meters per capita as in the United States, and only about 28 per cent as much electricity is consumed per capita. It is possible that during the next two decades the company's revenues might double about every five years, which was the experience of utilities in the United States for the two decades preceding the depression. But foreign political uncertainties will doubtless continue.

American & Foreign Power should enjoy complete exemption from the Utility Act of 1935, although the SEC has not yet formally acted on the application filed by the company for itself and all subsidiaries. The company's service contract with Electric Bond & Share Co. was canceled last November, since which time it has maintained its own organization, with no directors, officers, or employees in common with Electric Bond & Share. The contracts under which various services are rendered by the latter company to subsidiaries of American & Foreign Power were assigned to Ebasco Services, Inc., a subsidiary of Electric Bond & Share Co.

The following indicates the company's principal securities:

Amount Outstanding	Market Price About	Approx. Accrued Dividends
\$50,000,000 deb. 5s of 2030	70	
478,995 shares \$7 pfd.	37	\$33.00
387,026 shares \$6 pfd.	31	28.50
2,622,862 shares \$7 2d pfd. ..	16	41.75
1,980,734 shares common ...	7	
6,744,999 shares warrants ..	3	

The company owes nearly \$30,000,000 to the banks, due October 26, 1938, and \$42,500,000 is due Electric Bond & Share Co. about the same date. There are also large accrued dividends on the preferred stocks. Some sort of a capital readjustment may eventually prove desirable in order to clear up the back dividends, fund the bank loan, and convert the debt to Electric Bond to an equity basis.

Irrigation Projects As a Market for Federal Power

Is the administration now concerned about the successful disposition of the vast amount of power which the Federal government will eventually have to sell? In his address to the World Power Conference the President stated:

I had occasion recently to visit the great plains area of the United States where the greatest drought in history has thrown an oppressive burden upon the people of those states. In planning for the better use of those millions of acres, power is a factor of vital importance—power to be used primarily for the conserving of the water supply—power, the application of which is essential not only to the cities, but to the farms and ranches of that whole area.

There is no doubt that sales for irrigation purposes would aid in absorbing power from some Federal projects, for which local industrial uses might be lacking (even at yardstick rates). Such a program might well be aligned with the vast Federal program aimed at drought control, rural resettlement, improvement of marginal land, etc. The issue might remain as to whether these Federal projects are economically justified, but subsidized power to aid agriculture would seem more advantageous from a social viewpoint than the pour-

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ing of surplus Federal power into cities and towns already well supplied by private companies, by means of unfair cost accounting, unethical sales methods, and "cut-throat" rate competition.

July Earnings Statements

RECENT system earnings statements for leading utilities are summarized as follows: American Gas & Electric, for the month of July, showed a gain in net income of about 42 per cent over last year; in the twelve months ended July 31st the gain was about 12 per cent. In the latter period, \$2.05 was earned on the common stock compared with \$1.78 last year.

American Light & Traction, for the twelve months ended July, earned \$1.62 compared with \$1.12 in the previous year. In the twelve months ended June, \$1.58 was reported compared with \$1.11, indicating a gain in July.

American Power & Light in the quarter ended July earned \$1.16 on the preferred stock compared with 69 cents in the previous year; and for the twelve months \$5.42 against \$3.52. (In the quarter ended June, \$1.24 had been reported, compared with 80 cents.)

American Water Works & Electric for the month of July reported gross income about 7 per cent higher than last year; for the twelve months ended July, \$1.60 was earned against 92 cents last year.

Commonwealth & Southern for July showed a gain in net income (despite some possible drought effects) of 121 per cent; in the twelve months ended July 31st, 6 cents was earned on the common stock against a deficit of 3 cents last year. The showing for July was made despite a substantial increase in the allowance for depreciation.

Electric Power & Light in the quarter ending July 31st earned \$1.75 on the preferred stock compared with a deficit of \$1.22 last year; for the twelve months \$7.96 was earned on the first preferred against a deficit of 26 cents last year. Comparison with the corre-

sponding figures ended June 30th gives a favorable indication for July.

UNITED Gas Corporation in the quarter ended July 31st earned \$4.95 on the first preferred stock compared with 95 cents last year; in the twelve months \$20.36 was earned against \$9.54 last year. On the second preferred \$1.63 and \$6.79 were earned, respectively, in the quarter and twelve months' periods.

National Power & Light in the quarter ended July 31st earned 16 cents on the common stock against 11 cents last year; for twelve months, 90 cents against 81.

Public Service Corp. of New Jersey reported net income in July about 12 per cent over last year, but for the twelve months ended July 31st \$2.42 was earned on the common stock against \$2.63 last year. The July figures made a much more favorable showing than those for June so far as the comparison with the previous year was concerned.

Standard Gas & Electric Co. in the twelve months ended June 30th reported \$8.58 a share earned on the prior preferred stock and \$1.11 on the \$4 preferred (before deducting \$500,000 for special reserve).

United Gas Improvement Co. earnings for the third quarter are estimated by the *New York Journal of Commerce* as slightly better than the 26 cents earned in this period last year, the company having absorbed higher costs and taxes as well as rate reductions.

United Light & Power in the twelve months ended July 31st reported \$6.39 earned on the first preferred against \$1.57 last year. The showing was moderately better than that for the twelve months ended June.

Commonwealth Edison for the quarter ended June 30th earned \$1.37 per share against \$1.33 last year; for the twelve months \$6.23 against \$6.45.

Detroit Edison for the twelve months ended July 31st earned \$8.68 against \$4.38 for the previous year (after provision for Federal surtax on undistributed profits in the calendar year 1936).



Highlights of the Third World Power Conference Sessions

Here are reprinted digests and excerpts from the various papers submitted by American contributors for discussions at the various sessions of the Third World Power Conference recently held in Washington, D. C.

Organization of Private Electric and Gas Industries

(Afternoon Session, Sept. 8th)

MR. J. F. Fogarty, president of the North American Company, discussed in some detail the origin and development in the United States of the electric utility business which, as he pointed out, was of American origin as distinguished from the gas business, which was imported from Great Britain. He recalled early central stations' distribution plans and problems of Edison, the effect thereon of the Stanley transformer, arc light, and small local plant competition, and finally the progress of distribution through central station consolidation, area unification, and interconnection. Statistical evidence of the trend in consolidation was shown by the fact that in 1902 only eight out of 815 municipal plants and 70 out of 2,805 privately owned plants did not have their own generating facilities. In 1932, there were 865 municipal plants doing their own generating and 937 purchasing their entire supply. Likewise, in 1932, there were 704 privately owned plants

which distributed only, compared with 923 which generated as well as distributed.

Mr. Fogarty touched on the development of electrical operations in association with nonelectric operations. In former years, electric service was often added to established gas, street railway, and other business but more recently associated nonelectric or nonutility businesses remain as appendages merely because of legal, financial, or other obstacles to separation.

Selecting Wisconsin as an example because of its comparatively long (twenty-nine years) record of utility regulation, Mr. Fogarty's paper showed how the trend toward consolidation in the privately owned electrical industry has developed rapidly. Comparative service growth between publicly and privately owned electric utilities in Wisconsin was shown by the fact that while 10,069 municipal plant customers in 1907 grew to 71,705 in 1932 (a gain of 61,636), cus-

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tomers of privately owned plants numbering 34,012 in 1907, grew to 526,326 in 1932. Corresponding figures were given for the relative increase in generating capacity, revenues, and customer usage.

MR. Fogarty believed that the vast amount of capital required by the electric industry has precluded the possibility of its control falling to any great extent into the hands of a single group. He added that diverse ownership of important groups of properties has led to keen competition for the confidence of the investing public in order that the supply of capital so constantly needed might be obtained on the most economical bases. Concerning the holding company, Mr. Fogarty concluded:

The amount of investment in the electric light and power industry is the more noteworthy in view of the fact that only in comparatively recent years were some of the principal capital markets open to it. A number of states did not, and some still do not, permit investment of trust funds in electric utility securities, and only in 1928 did the legislature of the state of New York enact a law under which bonds of public utility companies became eligible as investments for savings bank funds.

In the great growth of the industry, the holding company has played an important rôle. It has provided a large amount of the necessary capital of its operating subsidiaries by investing its income as well as proceeds of its own capital securities, and by leaving in the business of its operating subsidiaries a considerable part of the earnings available for dividends on its own holdings. As the new money so provided by the holding company has been largely invested in the common stocks of the operating companies, such investments, together with the large accumulations of undistributed earnings over the years, have formed a substantial foundation for the issuance of the senior securities necessary to raise the balance of the extensive capital requirements.

Despite the apparent indictment of the holding company and of the efficacy of state regulation implicit in the Public Utility Holding Company Act of 1935, passed by Congress in August of last year, ample evidence exists that the sound holding company has been, and will in the future continue to be, an important contributor to the further development of the electric light and power industry and that in state regulation lies protection to both consumers

and investors in the public utility field. The market excesses of the late 1920's were regrettable but were no more typical of the public utility industry as a whole than of other lines of industry and of the state of the public mind toward investments generally during that period.

COMMISSIONER Robert E. Healy of the Federal Securities and Exchange Commission presented a paper outlining by decades, development of private electric and gas utility companies and the more recent influence of the holding company. He dwelt at some length on holding company practices which marked the growth and development of some utility systems, including many illustrations of financing and accounting practices taken from the reports of the Federal Trade Commission in its investigation of utility corporations. Commissioner Healy was the counsel in charge of the Federal Trade Commission's investigation during most of the period which it covered.

To illustrate the concentration of ownership and control of private electric and gas utilities, Commissioner Healy gave a brief description of some of the larger holding company systems. He gave a demonstration of practices of "pyramiding" control of operating companies through a series of subholding companies, as well as examples of excessive levying by holding companies on subsidiaries for alleged managerial and other types of intercorporate service.

Commissioner Healy conceded that the growth of the electric industry in America constitutes a great engineering achievement but charged that the financial and intercorporate structures of some of the systems stand in "striking contrast to their physical structures." He believed it would have been better for the investor as well as the consumer if the industry's security issues had been based on cost rather than valuations and appraisals.

Commissioner Healy added that the future of private utility companies depends to a great degree on "whether a fair and easily workable method of rate regulation can be developed" and also

on whether the industry can free itself from financial manipulation. Commissioner Healy concluded:

Over the years the general trend of rates has been downward. The general tendency of costs during the same period has likewise been downward. It is open to serious question whether the reduction of rates has been commensurate with the reduction in costs. The writer believes that in some instances the downward trend of rates has been promoted by the consolidation of small companies into larger operating units, but in other instances this movement has been retarded by the holding company because of the constant necessity of straining for earnings to support a top-heavy and inflated holding company system. How far the neglect of adequate depreciation allowances, because of this same necessity, may affect the future financial statements of operating companies and their rates and services is difficult to say.

It is not easy to form a judgment as to the net benefit of the holding companies to the industry. The electric industry had its growth during one of the most progressive periods in history. While it was growing, the telephone, the radio, the motion picture, the automobile, and the modern highway also were developed. It cannot be that except for the holding company the electrical

industry would have lagged far behind. In earlier days by acquiring small plants in the smaller cities and towns, interconnecting them and substituting an efficient central station for inefficient local plants, the holding company performed a public service. Nevertheless, as a result of the financial practices, some of which are herein recounted, the full benefits of these accomplishments did not get through to the public and many a small city now linked into a big system would have had just as good or better service from an efficient local plant. Furthermore, interconnection and efficient central stations could have been brought about by combinations resulting in larger operating companies without need of holding companies. It is difficult to see wherein the well-established operating companies in the large cities gained anything for themselves or their customers when they were acquired by holding companies. Several of them are very successful and are not so owned. Part of the public's well-justified distrust of the speculative holding company has been carried over to the operating companies. The experience of the last few years leads to the conclusion that generally speaking holding companies which are not in the first tier above the operating companies, or which are not necessary to hold together an efficient integrated system, do more harm than good.

Regulation of Privately Owned Utilities

(Morning Session, Sept. 9th)

A PAPER contributed jointly by Professor William E. Mosher of Syracuse University and Dr. James C. Bonbright, trustee of the New York State Power Authority, reviewed critically the record of public utility regulation in the United States, dividing the subject into three classes: (1) franchise and direct legislative regulation; (2) state commission regulation; and (3) Federal regulation.

The authors found that, although local franchises are generally required as a condition of operation, the chief agency of regulation of utilities is the public service commission, a state agency with broad grants of administrative, semilegislative, and judicial power. It was claimed that practically without exception the commissions are inadequately

financed, which seriously hampers them in carrying out their duties. Usually commissioners are appointed by the governors of the states. The authors found that conflict between the courts and the commissions, particularly as to valuation matters, has hampered effective regulation.

Federal regulation, it was said, centers about power developments on navigable streams and on water flowing through public lands. This control is now centered in the Federal Power Commission. In 1935 this commission was also authorized to exercise jurisdiction over power sold for resale purposes across state boundaries. In conjunction with this, it is instructed to formulate a regional and national power program, looking toward the most economi-

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cal exploitation of water, gas, oil, and coal resources.

Under the same act the Securities and Exchange Commission is to regulate holding company organizations, their operations and finances in so far as they are engaged in interstate commerce in electricity. A similar measure is being shaped up for the control of interstate transactions in natural gas.

SUPPLEMENTING direct regulation is the plan for establishing "yardstick" enterprises at public expense, such as the Boulder dam and Tennessee Valley Authority. Such power developments aim to supply low-cost power to publicly owned and operated distribution systems in the localities, thereby demonstrating the feasibility of much lower rate levels than those generally prevailing. The central government has also stood ready to render financial aid to localities interested in establishing their own distribution system. The paper concluded:

In conclusion, certain comments may be in order as to the effectiveness of regulation of gas and electric utilities. Over the space of the last twenty-five or thirty years since the commission method of regulation was inaugurated, it has at best been but partially successful. This has been due to the lack in most states of a professionalized body of commissioners, to inadequate appropriations, to deficiencies in the basic laws, to the imposition of thoroughly unworkable methods of valuation on the part of the courts, as well as to a lack of agreement among economists and engineers on their basic premises on this issue, and finally to the exploitative tendencies of some of those within the industry itself. Since the early twenties, both the electrical and gas industries have been largely under the domination of bankers and lawyers.

Bankers and brokers have sought the highest possible return, evidently failing to appreciate the element of trusteeship implicit in public callings which carries with it the acceptance of a limited and a fair return. The perspective of the lawyers has also been restricted and lacking in an appreciation of the public aspects of the utility business. They have been accustomed to place exclusive reliance on common-law standards of justice and the methods of judicial attainment of rule, and have been prone to resist the interference of indirect legislation as represented by such an administrative agency as the public service commission. Those primarily

responsible for the conduct of the utilities have been all too inclined to look upon them as any other profit-making business enterprise. The sense of trusteeship has been much less evident as a guiding motive than underlying conditions require.

Regulation, whether on a state or local basis, falls far short of satisfactory standards, although a few commissions have made appreciable and noteworthy advances in this direction. The faith of the public in the ultimate effectiveness of regulation appears to be rather on the wane than otherwise. This is evidenced by the growing interest in public ownership. Whether recourse will be taken to this as the only substitute for regulation will depend on the readiness and ability of those responsible for utility management to cooperate with public bodies and on the quality of the latter and their staffs, and their ability to put the administration of regulation on a higher level.

Mr. John E. Zimmerman, president of the United Gas Improvement Company of Philadelphia, Pa., replied to the foregoing paper of Professors Mosher and Bonbright by defending commission regulation of utilities in the United States. There is no parallel to it anywhere else in the world, he said. Properly subject to judicial review, the American regulatory system is sensitively appreciative of the varied characteristics of our various phases of utility operations—local, intrastate, and interstate. After sketching the origin and growth of commission regulation and discussing proper Federal-state regulatory relations, Mr. Zimmerman deplored the recent tendency of the Federal government to disregard commission findings as to the reasonableness of rates and to encourage the establishment of public plants as "yardsticks." He discoursed upon the fallacy of the "yardsticks" by reason of the divergence in operating conditions.

The net effect of the "yardstick," if any, will be the reversion to competition of a wasteful character by reason of the unnecessary duplication of utility facilities with resulting increase in expense to the ratepayer. Mr. Zimmerman concluded:

Commission regulation has not attained perfection, but compared with any other

form of regulation its superiority both in theory and practice has been demonstrated. The public has gained from commission regulation in innumerable ways. It has attained advantages it would not have had from either public or private management, in the absence of commission supervision.

Any obstacle to commission determination of the reasonableness of payments to related companies has been cleared away by the establishment of the rule that a utility, in asking for allowances for payments to affiliated companies, must prove the reasonableness of such contracts. The burden has therefore been thrown upon the utility to furnish satisfactory evidence that the payments are justified. In several cases commissions have entirely disallowed such payments because of the failure of the operating companies to furnish evidence of their reasonableness.

In some states laws have been passed authorizing commissions to investigate contracts between affiliated companies, even going so far as to provide that such contracts unapproved by the commission are invalid. Commissions also have been given power to prevent upstream loans by operating companies to their holding companies, thus preventing the possibility of unfair rates by the operating companies because of excessive charges for holding company services or inadequate service because of impairment of credit of the operating companies by financing practices which would not be approved by the commission.

Moreover, Federal laws enacted to regulate the small proportion of interstate business of electric companies have been made so broad in scope that there is a needless duplication of state and Federal regulation

making unnecessarily cumbersome the responsibilities of private management.

While the commissions, in addition to their other activities, have, as pointed out, required extensive reductions in rates, they have courageously refused to yield to popular demand to fix rates without regard to their effect on company finances and have fearlessly ordered rate increases when they deemed such action necessary. With confidence that the commissions would establish rates fair both to company customers and stockholders, there has been a tremendous expansion of gas and electric utilities since 1907, together with a constant improvement in service and steady decrease in rates. The fact that this has happened during the era of commission regulation is convincing evidence of its wisdom and success.

It would seem that not much room is left for further increase of commission powers over utility activities. The powers of certain state commissions will probably in time be increased so as to equal those of the stronger commissions. . . . So far as regulation in the future is concerned, the problem will probably not be so much one of extension or limitation of powers of state commissions as one of confining Federal regulation to those matters which under our form of government come clearly within the provisions of the Federal Constitution.

If such Federal regulation is not strictly confined to those matters then there will be needless and expensive duplication of utility reports, conflicts of jurisdiction, conflicts in accounting requirements, and duplication of administrative controls, all of which will be most costly and a serious deterrent to the further growth and expansion of the electric and gas industry.

Regional Integration of Gas and Electric Facilities

(Afternoon Session, Sept. 10th)

MR. George N. Tidd, president of the American Gas & Electric Co., presented a paper objecting to "wide grants of power already given the Federal Power Commission and the Securities and Exchange Commission for the ostensible purpose of promoting regional integration of electrical facilities." He charged that the popular idea of regional power systems for the United States is really part of the much-talked-

of government planning program. This idea of integrating electrical facilities, he stated, is not new but has been going on for several decades in the United States; the British grid is modeled after the United States practice. Mr. Tidd showed, with the aid of maps, the absurdities of districting the United States into arbitrary power zones. He added that if left alone and unhampered by such punitive legislation as the Public

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Utility Act of 1935, the private electric industry would complete regional integration along such and economic lines. Mr. Tidd developed eighteen specific conclusions as follows:

1. The economics of electric utility system integration properly carried out is extremely sound. The whole history of the utility industry in the United States bears this out. The sound status of the industry is due in a great measure to its adoption of the integration idea some three decades ago.

2. The "grid," or network, principle of operating high-tension systems is excellent. The British grid is a comparatively recent example of the working out of this principle.

3. Because of the backward state of the electric supply art in Great Britain, a state which they have described as chaotic, and because of the chaotic condition with regards to types of systems, limited areas served, voltages, and frequencies—a state reached because of, and after, four decades of the most rigid governmental control—the government finally felt compelled to step in and undertake the task of integration. It was the only agency that had the authority to clear up an impasse of its own making.

4. The model for the physical set-up finally adopted in Great Britain was the integrated power supply systems in the United States which had reached a state of mature development when discussions of the British grid began.

5. In spite of the above there has been expounded, by governmental agencies in particular, the notion that what the power supply systems of the United States need is an American version of the British grid.

6. There exists no parallel between the conditions of the electric supply industry which called for governmental action in Great Britain and those of the electrical utility industry in the United States, either in the past or in the present.

7. Those most actively sponsoring that particular idea of integration are concerned primarily with carrying out the idea of a planned national economy, centrally administered.

8. Proposals for regional power systems originating from those who have not had broad experience in developing and operating such systems are more likely to have paper rather than practical value.

9. In the United States, integration of power systems has been going on since the earliest days of the electrical supply industry. The body of this paper proves this conclusively.

10. The pattern for this integration has not been a neat paper section, but rather the natural boundaries imposed by geographical limitations, industrial regions, technical limitations, state laws, and corporate interest.

11. At the present time there are at least 10 approximate equivalents of the British grid in the United States. The population of the United States is roughly three times that of Great Britain.

12. In the development of these integrated systems the utilities of the United States have had to pioneer sometimes alone but in general jointly with sympathetic manufacturers to develop the physical tools and equipment which have made integrated operations possible all over the world.

13. Despite statements to the contrary, the utilities of the United States have demonstrated willingness and ability to voluntarily coordinate their respective system planning and operation in order to improve service, cut cost to the consumer, and make their investment reasonably profitable.

14. An outstanding example, world noteworthy, is the coordination of the integrated systems serving the middle eastern and southeastern portions of the United States. Systems having capacities in service of close to 7,000,000 kilowatts operate daily in parallel and with closely coordinated generation and transmission facilities.

15. The process of integration of electrical systems in the United States is not completed. It perhaps never will be. But permitted to develop naturally, with proper regulation, it will assuredly resume growth upon receiving even the slightest encouragement and stimulation. The objection to some of the present statutes, apart from their illegality, is their tendency to encourage disintegration of utility systems.

16. If permitted to continue to develop along natural lines, there is every reason to believe that continued utility system integration will not only result in keeping American power systems in the forefront of world practice but will also help the national economy in two distinct ways:

(a) By furnishing the United States with an abundant, economical power supply.

(b) By creating a vast demand for capital goods and supplies needed to further expand and integrate the many power systems.

17. This program will not result, it is true, in a so-called planned system. But it will have the advantage of being based on actual experience and developments in the United States over the past forty years. It will be a distinctly American system

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sued to American conditions and the American scene.

18. In its broadest aspects such a system of integration will be consistent with and a part of a free economy as against a planned or managed economy. There have been within the interval involved between the starting and concluding of this paper some indications which point to the discontinuance of the so-called planned economy as a national policy in the United States. From the viewpoint of its effect on the future electrical development of the country, the writer sincerely hopes so.

VICE Chairman Basil Manly proposed in his paper the pooling of electric power both governmentally owned and privately owned, in regional systems subject to Federal control. This, he said, was "the best solution of the numerous problems created by the development of larger blocks of hydroelectric power as an incident to the construction of Federal public works." Commissioner Manly summarized his paper as follows:

The coordinated operation of electric generating plants and transmission facilities on a regional basis is a timely subject. From all parts of the country come reports of increasing demand for electric energy, of sales exceeding all previous records, and of hydroelectric capacity that is not available because of the great drought. The pressure upon the power producers for lower costs is likewise continuous and insistent.

Engineering studies and practical experience alike have demonstrated that proper interconnection and coordination of power facilities releases capacity to meet these growing loads and at the same time lowers the cost of energy to the distribution system. By the same means, also, there may eventually develop an economical solution of the problem of meeting in a sound and orderly manner the problems arising in those regions in which the Federal government is producing or will produce large blocks of electric energy as an incident to the construction of public works for the improvement of navigation, irrigation, and flood control.

The Congress, recognizing the benefits that may be obtained by interconnection and coordination of generating and transmission facilities, as well as by the more complete integration of utility systems, has, in recent legislation, provided for their encouragement through appropriate government agencies.

There would appear to be no legal or practical obstacle to the development of a

plan through which all the power in the region in which a major Federal power project is located could be "pooled" under the control of some central agency which would coordinate the generating and transmission facilities of the region and make the benefits of the pooled power available to both publicly and privately owned distribution systems, to industries located anywhere within the area, and to agricultural regions which might not otherwise be accessible.

Certain major considerations must be provided for in any plan for regional pooling that may be regarded as practicable.

(1) An effective Federal agency must be created to operate the pool. Such agency should preferably have a board of directors in which the national interest would be preponderantly represented but which would also afford an opportunity for regional and local interests to have an effective voice.

(2) The agency must possess adequate power and financial resources to acquire control of or construct a transmission network which will ultimately cover the entire area of the region in which the pool is to operate. In the opinion of the writer it would not be desirable for this agency to purchase transmission facilities or construct them except where it is necessary. All the practical objectives of the pool can be attained as effectively by lease of transmission facilities as by purchase.

(3) All participants in the pool must commit themselves to place their generating facilities, transmission lines, and substations under the control of the managers of the pool, subject to such agreements as may be necessary with reference to the basis upon which power is to be taken from generating stations and delivered to distribution systems and the compensation that is to be paid for the use of transmission lines.

(4) There must be agreement that all distribution systems, whether publicly or privately owned, shall be supplied from the transmission network at rates which shall be uniform for communities which possess the same characteristics and are similarly situated.

(5) The central agency must possess adequate powers to construct additional transmission lines and interconnections wherever necessary and to plan and, if necessary, finance and procure the construction of such additions to generating facilities as may be required by the pool to meet the present and future requirements of the region served.

The establishment of a system of regional pooling would appear to present the best solution of the numerous problems created by the development of large blocks of hydroelectric power as an incident to the

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construction of Federal public works projects. From the standpoint of the Federal government it would afford an orderly method of disposing of electrical energy in large quantities and would thus provide an assured source of revenue for the liquidation of the expenditures involved in such projects. It would minimize the conflict with privately owned utilities and avoid the duplication of transmission facilities which will be necessary if the power from Federal projects is to be marketed at existing load centers. It would make power available to communities and agricultural areas throughout large regions at rates as low as, if not lower than, the rates which must be charged if the Federal agency seeks to find a market for all its power by selling directly to industries and communities located within reasonable transmission radius of the project.

To the private utilities which are directly affected, the adoption of such a plan of regional pooling would create a condition of security which would enable them to proceed immediately with the refunding

of outstanding securities at the low interest rates which are now available. Investors in their securities would be protected not only from possible losses arising from direct competition but also from severance damages that would otherwise be created if municipalities should acquire local distribution systems. Power generation and transmission costs would be substantially equalized throughout large regions. The utilities participating in the pool, as well as the consumers within the territory affected, would be benefited by the incidental development of power in connection with the construction of Federal public works projects.

The nation as a whole would profit from the extension of the benefits of Federal projects to larger areas than could be economically served by direct transmission. Finally, the assurance of dependable supplies of cheap and abundant electricity throughout large industrial regions in close proximity to essential raw materials, would be of incalculable value from the standpoint of national defense.

To be concluded in the next issue.

Notes on Recent Publications

BUILDING AMERICA, A PHOTOGRAPHIC MAGAZINE OF MODERN PROBLEMS. Special Power issue. (April) Published with assistance of Lincoln School of Teachers College, Columbia University, and the Works Progress Administration, New York. Project Number 65-97-295, Sub-project 27. Room 334, Lincoln School, 425 West 123rd Street, New York, N. Y.

This magazine published by WPA workers in New York city with generous illustrations is supposed to be a "nonpartisan" presentation of current affairs for use in public schools. This particular issue contains, however, propaganda for the promotion of public ownership of public utilities. It is stated as a fact, for example, "city owned plants have brought lower electric rates and lower taxes." Some of the text implies that Federal power development is a necessary step in the conservation of natural resources.

MUNICIPAL LAW JOURNAL. (A monthly journal.) Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington, D. C., \$10 a year.

The first issue of another new journal in the field of municipal law appeared in January, 1936. It covers briefs and opinions, views on current problems, Federal rulings and regulations, recent decisions, new ordinances, and list of important current law review articles. This publication should be valuable to city attorneys, city clerks, and

others who would keep up-to-date with municipal legal affairs.

PLEASE, MR. LILIENTHAL! Snap Shots, organ of the Georgia Power Co. March, 1936. Reprinted in *Electrical World*. April 25, 1936.

An article which purports to answer many claims of the TVA in affecting utility practices.

PUBLIC UTILITIES AND THE NATIONAL NEED. By J. P. Pope. *Electrical World*. April 25, 1936.

THE DUKE POWER DECISION, WITH REFERENCE TO RECENT SUPREME COURT DECISIONS. By James G. Mitchell. *The Annalist*. March 27, 1936.

THE MASSES GO INTO BIG BUSINESS. By Bertram Fowler. *Scribner's*. April, 1936. The spread of consumer cooperation in America.

THE TENNESSEE VALLEY AUTHORITY DECISION. By William L. Ellis. 4 *George Washington Law Review* 299. March, 1936.

TRUTH ABOUT THE NEW DEAL. By Earl Reeves. Longmans, Green & Co. 114 Fifth Avenue, New York. Price \$1.00. 1936. 117 pages.

WHAT PRICE SECURITY? By Bernard Kilgore. *Today*. April 4, 1936.

The March of Events

Orders Uniform Accounting

THE Securities and Exchange Commission on September 7th ordered all registered public utility holding companies "deriving practically all their income from dividends and interest on investments in other companies" to adopt its uniform standard of accounting beginning January 1, 1937.

The system was prepared and adopted after extended conferences with representatives of both registered and nonregistered companies, leading accounting societies, and individual experts, and is said to be the first official standard issued by an agency of the government. It applies only to those holding companies which derive most of their income from investments but does not "meet the requirements of holding companies which also directly own and operate public utilities or other property."

Designed primarily to eliminate the practice of writing up the value of investments in balance sheets, in accordance with the principles of the Wheeler-Rayburn Act, the system also contains requirements for the segregation of surplus to show what represents capital surplus and what is earned surplus and a provision that stock dividends from subsidiaries may not be taken into income or surplus at amounts greater than those charged by the paying companies to their income and (or) earned surplus accounts, and then only to the extent that such dividend is declared from earnings subsequent to acquisition by the company of the stock in respect of which the dividend is paid.

Charges Phone Cuts Insufficient

CHARGING that rate reductions and adjustments which voluntarily have been made by the American Telephone and Telegraph Company are insufficient, the Federal Communications Commission on September 10th instituted a general investigation into the entire rate structure of the telephone company. The action demanded that the company "show cause" why its rates should not be drastically cut further to satisfy complaints which have been made to the commission and to justify a "record of profits over a long series of years."

This move launched the rate investigation which has been awaited since inception of the A. T. & T. investigation and which has been touched upon only sketchily in the inquiry so far. Carl I. Wheat, recently employed California utility rate expert, will be in charge of the rate investigation.

Chairman Paul A. Walker of the FCC telephone division, in charge of the investigation, asserted that the toll rate cuts put into effect by the A. T. & T. and associated Bell companies September 1st were "not a drop in the bucket." Hearings in the rate inquiry are to be held sometime during the fall and conducted as a parallel to the general investigation now in progress. Chairman Walker emphasized that the burden of proof would fall on the telephone company and that the company would have all the opportunity desired to present its side of the case. The hearings, he said, will not be of an *ex parte* nature.

Answers Roosevelt

ASSERTION by President Roosevelt that more Federal dam projects can always be added was labeled as "a clear-cut admission of New Deal guilt in the abuse of constitutional functions for the purpose of achieving unconstitutional objectives" by Philip H. Gadsden, chairman of the Committee of Utility Executives, it was reported last month. Mr. Gadsden said that this was an open and official declaration that the real purpose of the hydro-electric program is to force further reduction of electric power rates.

Mr. Gadsden further stated that the President "has served notice upon the millions of citizens whose savings are invested in operating utility companies that, unless rates are adjusted, the properties in which they have invested their savings are going to be subjected to further destructive and unconstitutional Federal competition."

He declared that no other interpretation could be placed upon the President's words than that the recent official emphasis upon navigation, flood control, and conservation "are but a constitutional smoke screen cloaking the unconstitutional Federal power program."

The President's address was one of the closing features of the Third World Power Conference which adjourned September 12th. Four hundred delegates left Washington to begin a series of technical study tours in the great industrial centers and power plants of the United States and Canada.

Briefs Filed in Test Case

THE initial arguments of both plaintiffs and defendants were filed in the district court of the United States for the southern district of New York on September 14th in the form of briefs by the Securities and Exchange Com-

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mission and the Electric Bond and Share Company et al., defendants. This is the government's hand-picked case to determine the constitutionality of the Public Utility Act of 1935, oral argument on which has been tentatively set for October 5th, Judge Julian C. Mack presiding.

Three briefs were submitted by the commission comprising nearly 500 pages, while approximately 200 pages of factual background and argument were supplied the utilities' initial defense, in a case that may determine the future of the industry.

Upholding the validity of the registration sections of the Public Utility Act, the government's briefs asked dismissal of the defendants' cross bill which asked that the entire act be declared unconstitutional.

Suit was begun against the Electric Bond and Share Company and twelve of its affiliates by the SEC last November. It is said to be the hope of all concerned that it

will reach the United States Supreme Court this winter.

Grid System in TVA Area

PRESIDENT Roosevelt revealed last month that the idea of a grid system in the Tennessee valley, tying in private facilities with TVA power lines, had been considered in recent talks with utility officials. He remarked, however, that the discussions were tentative.

The subject came up, the President said, during conferences with Wendell L. Willkie and Preston Arkwright, officials of the Commonwealth and Southern system, on the question of renewing TVA's contract with the Alabama Power Company, a Commonwealth subsidiary. The President expressed the hope that the contract could be extended temporarily pending the formulation of a long-range program for the Tennessee valley power set-up.

Alabama

Light Bills to Be Lower

NEW residential electric rates effecting a half-cent reduction per kilowatt hour went into effect September 5th for customers of the Birmingham Electric Company. The reduction, the second under the "objective system" which went into effect in April, 1935, brought the top rate for domestic consumption from 6 to 5½ cents per kilowatt hour. It was estimated that total savings to customers would amount to \$50,000 a year.

Under the first reduction, made last December, individual customers found their bills from 8 to 16 cents less when the top rate was cut, at that time, from 6½ cents per kilowatt hour to 6 cents. It was said the new rate became effective because more than half of the Birmingham Electric Company' residential customers now use a minimum of 35 kilowatt hours per month. The objective rate has for its aim a decrease in the cost of residential

current as consumption of electricity goes up.

Under the new rate the top price for current is 5½ cents per kilowatt hour for the first 4 kilowatt hours per room; 5 cents for next 6 kilowatt hours per room; 2½ cents for the next 180 kilowatt hours, and 1½ cents for all additional current.

Municipal Acquisition

CITIZENS of Fairfield, a suburb of Birmingham, were scheduled to vote September 21st on the question of acquiring a municipal power system to distribute TVA electricity. An ordinance providing for the referendum was unanimously approved by the city commission.

Fairfield was reported to be the third Jefferson county municipality to initiate efforts to obtain TVA electricity, Tarrant City and Bessemer already having started negotiations.

Arizona

Announces Lower Rates

LOWER rates on commercial lighting and power service in Globe and Miami, effective with meter readings of October 1st, were announced last month by W. B. Lewis, manager of the Arizona Edison Company, Inc., which furnishes service in the two communities.

The reduction was the second made to commercial users during the past twelve months and was made after conferences between company officials and members of the Arizona Corporation Commission.

The new rates mean a saving of approximately \$8,800 annually to residents and businessmen, the largest saving—\$5,300—going to Globe.

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Arkansas

Seeks TVA Power

CITY officials of West Memphis early last month instituted court proceedings intended to lead to an application for Tennessee Valley Authority power.

City Attorney Doyne Dodd, who filed the bill, asked Chancellor J. F. Gautney to fix the value of the distribution system owned by the West Memphis Power and Water Company, or declare void the franchise it holds from the city.

California

Balks Bond Test

ACOURT test on the legality of the San Francisco board of supervisors' authorizing the issuance of revenue bonds without a vote of the people for power distribution appeared doomed for failure last month. The public utilities commission refused to approve a resolution designating plan seven, entailing an expenditure of \$43,700,000 for distribution of Hetch Hetchy and purchased current to the entire city, as its officially favored distribution plan.

Instead they indorsed again plan seven,

which they previously had indorsed as a feasible undertaking along with plans five and six, alternate distribution proposals. Rejecting a resolution drawn to bring about a state supreme court test, the commission asked the assistant city attorney to draw up a resolution approving plan seven.

The proposed resolution would not enable the board of supervisors to obtain a court test. The legality of the proposal that the city attempt through technicalities of the charter to avoid a two-thirds vote of the people in issuing power distribution bonds was doubted by attorneys.

Colorado

FPC Opens Regional Office

ADENVER regional office of the Federal Power Commission was expected to start functioning before October 1st, according to a recent announcement of Frank R. McNinch. The Denver office will be one of five in key cities of the country.

The Federal Power Commission under recent acts which have extended its authority will function in a general way in relation to power companies as the Interstate Commerce

Commission functions in transportation matters. The power commission's authority is confined to companies engaged in interstate power transmission, but it plans to work in close coöperation with state utilities commissions.

Much of the work of the Denver office will consist of holding hearings and making studies regarding the amount of power used, prices, and the like, it was said. Leshar S. Wing, of Sacramento, Cal., will be in charge of the office.

Delaware

Wins Plant Fight

ANOTHER step in Seaford's fight to own and operate its own electric power plant was taken last month. The city council granted a 20-year franchise to the Seaford Light and Power Company to build and operate a power plant with optional clauses which give the city the right to buy the plant within five years.

The company awarded the franchise was one of the joint defendants with the city council in temporary injunction proceedings instituted by the Eastern Shore Public Service Com-

pany whose franchise had expired. The latter company, which has been leading a fight in the courts against the plans of the Seaford officials for the last two years, was denied a temporary injunction by Chancellor Josiah H. Wolcott, at Dover, which would have held up the franchise.

The terms of the franchise require the concern to erect and operate a modern power plant for which they pay the town \$2,500 a year. The city council is to have the privilege, within the first five years of the franchise, to purchase the plant for municipal operation at cost price, with the provision that the total net

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profits, realized by the company up to the time when the city takes it over, be applied as a part payment on the purchase of the plant.

It was estimated the company would have an investment of between \$180,000 and \$200,000 in the new plant and system.

Florida

Seeks Cheaper Rates

COMMISSIONER E. G. Sewell last month sought further relief in public utility rates and better service in two resolutions presented to the Miami city commission. One authorized negotiations with engineers to ascertain cost of a thorough survey of the Miami water distribution system and rates charged. The sec-

ond sought reduction of rates on gas in Miami to \$1.35 per thousand cubic feet.

The commission voted favorably on the water survey resolution, demanding that "adequate water distribution facilities be provided in all sections of Miami." Action was postponed on the resolution authorizing a conference with gas company officials concerning the urged gas rate reduction.

Illinois

To Order Rate Cut

THE Illinois Commerce Commission was expected to order a reduction in the electric rates of the Commonwealth Edison Company before the end of September, James M. Slattery, chairman of the state body recently stated. Mr. Slattery said the amount of the reduction had not been determined.

The Edison Case has been before the commission for nearly two years following a citation for the company to show cause why a reduction should not be ordered. Counsel for the commission at the conclusion of hearings in the case last July, recommended that rates be cut by \$6,500,000 a year. The recommendation was made by Harry R. Booth, assistant counsel. Company attorneys maintained that such a cut would practically eliminate the earnings of stockholders.

An announcement of the Horner administration, issued by the publicity department at the statehouse in Springfield, said Governor Horner desired "if possible to bring about reductions that will compare favorably with those made downstate." The statement continued:

Chicago has not received a reduction other than the Commonwealth Edison Company absorbing the 3 per cent sales tax. Downstate companies also absorbed the sales tax. The possibility of a reduction of from 5 to 7 per cent, approximately \$6,000,000, in Chicago rates was forecast.

Gas Company Files Suit

THE Peoples Gas Light and Coke Company, which has a rate case pending before the commission, last month took court action to seek reversal of a commission order. The company, through its attorneys, filed a suit in circuit court at Chicago against the commission and Otto Kerner, attorney general, it is reported.

The company asked the court to authorize an immediate increase in rates at the rate of \$3,000,000 annually and to issue an injunction against the commission to prevent the state body from interfering with the new rate schedules.

The company had requested the commerce commission to authorize a temporary rate increase pending completion of the rate case before the commission. The state body had denied the request. The company now claims that its present rate schedule does not allow a fair return on the property used and is confiscatory.

The city of Chicago subsequently made formal protest against an increase in gas rates in that city when Corporation Counsel Barnet Hodes filed an intervening petition opposing the suit brought by the utility. The city's petition stated that the new rate schedule would place an unreasonable and discriminatory burden on small consumers of gas and that present rates were adequate to insure a fair return on the investment.

Iowa

Fights Natural Gas

IOWA City on September 9th filed in the United States district court its disagree-

ment with a master in chancery report recommending that the Iowa City Light and Power Company be permitted to install natural gas service. The exceptions of the city to the re-

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port were to be heard in court September 21st, it is said.

The city's exceptions included the claims that the company's franchise had not been extended by implication in any way, that nat-

ural gas service was more expensive than manufactured gas, and that natural gas service would require extensive changes in equipment affecting 4,000 burners in the state university's chemical laboratory alone.

Kentucky

To Decide Municipal Ownership

THE Glasgow city council early last month passed an ordinance calling an election to let voters of the city pass on the proposal to have a municipally owned power plant. The city of Glasgow, it was said, plans to pay for the plant by issuing \$200,000 in revenue bonds.

The franchise of the Kentucky Utilities

Company, operating in Glasgow, expires November 30th.

To Vote on TVA

AN ordinance providing for a referendum on a \$150,000 bond issue for construction of a municipal system to distribute TVA power in Middlesboro was passed September 1st by the city commission. The mayor was authorized to carry on negotiations with TVA officials.

Louisiana

Seeks Natural Gas Approval

MAYOR W. B. Graves of Glenmora announced last month that the city was waiting for approval from Washington on the \$65,000 WPA project to supply the residences and business houses of the town with natural gas. Mayor Graves said a bond issue of \$30,000 had been voted by the town and application had been made to the WPA for the remainder of the funds necessary for the project.

Plans are to pipe the gas from Oakdale.

Preliminary steps of securing right of way are being taken, it was said, so that the project may be started if WPA approval is given.

Cut Effects Saving

A REDUCTION of electric rates, recently voted by the Alexandria commission council, became effective last month. The revision of charges was expected to save residents of the city approximately \$76,000 a year.

The electric power plant is municipally owned and operated.

Maryland

Coöperative "Loses" Territory

ACTION of the Maryland Public Service Commission last month in denying the Consumers Coöperative Company of Calvert county the right to build certain lines may mean it will not be able to go ahead with its plan of rural electrification. John B. Gray, Jr., one of the organizers of the coöperative said it was "highly questionable" whether the company would ever sell electric power in Calvert county.

The commission denied the coöperative's application and gave to the privately owned Maryland Light and Power Company the right to construct lines in territory described as the most lucrative in the area the coöperative had planned to serve. Gray said the private utility had been awarded "the best of the territory."

The coöperative had arranged for a \$90,000 loan from the REA in Washington to build 70 miles of lines for 450 customers, but after the commission's action found itself with the prospect of only 300 customers requiring 55 miles of line.

The commission, in defense of its action, denied that it was opposed to the entry of coöperative electric power associations into Maryland.

Phone Rates Slashed

THE Chesapeake and Potomac Telephone Company on September 3rd reduced its rates on certain classes of service, saving about \$92,700 a year for users of 40,000 telephones in Maryland. The reductions were retroactive to September 1st. The state public service

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commission said the new reductions brought the annual savings to Maryland subscribers under rate revisions during the last year to about \$858,000 a year.

Under the new rates, extension phones in Baltimore city were cut from 20 to 25 per cent in cost. Outside of Baltimore, extension stations cost 25 cents a month less. The company said the Baltimore city change would

affect 8,500 telephones, with an annual saving of \$23,500, while the changes in the counties would affect 6,500 telephones with an annual saving of \$19,400.

The company and the commission also reached an agreement to reduce the costs of hand sets. The new rate for hand sets is 15 cents a month for twelve months or a \$1.50 flat charge.

Massachusetts

Petition for Lower Rates

PETITIONS were received on September 14th from the selectmen of the town of Charle-mont and seventy-four residents of Winthrop and Revere seeking lower electric rates, and public hearings were requested before the

state department of public utilities, it is re-ported.

The petition of the customers of the Sub-urban Gas and Electric Company, which serves Revere and Winthrop, stated that the rates were excessive and that they should be re-duced.

Minnesota

Favors TVA Set-up for Valley

PRESIDENT Roosevelt at the drought confer-ence in Des Moines, Iowa, last month stated he favored creation of a Federal authority conservation similar to the TVA for the Red river valley water conservation program, L. P. Zimmerman, Minnesota relief administrator, disclosed recently.

The announcement that the Minnesota con-gressional delegation would be asked to fur-ther passage of an act creating the Red River Valley Authority was made by Administrator Zimmerman under authorization by Governor Hjalmar Petersen.

Plans for legislative action in Minnesota, North and South Dakota to create a tri-state authority for maintenance principally of Red river valley water conservation improvements will be continued, it was announced. The present program for the Red river, which stresses work for an adequate water supply, involves an expenditure of approximately \$12,000,000.

Governor Petersen received assurance from the President that work on the Red lake water conservation project to provide an ade-quate water supply for communities in the Thief river falls district would be started at an early date.

North Carolina

Waterless Lake State's Quoddy

NORTH Carolinians were reported last month to be considerably exercised over a re-cent press article commenting upon a WPA project for the city of Mt. Airy. The project was to build a lake for the city for the com-bined purposes of providing water supply and recreational facilities. Its basin has been ex-cavated high in the mountains. The fish with which to stock it have been engaged from the hatcheries. Boats have been provided and the city has purchased a launch. So far, however, there is no water in the lake for the reason that it is situated at such an elevation that water could not naturally get there.

Mt. Airy officials have dissented vigorously,

laying all the blame on some unknown news-paper man who wished to write a funny story. Champions of the project insist that a canal, to be constructed, will make the project prac-tical. Critics, however, suggest that the canal is an afterthought and that the whole scheme is a blunder "comparable to Quoddy."

Additional Power Planned

At the suggestion of the Federal Rural Elec-trification Administration, which has ap-proved its application for a loan of \$430,000, the Caldwell County Rural Electrification Committee last month decided to include Burke, Watauga, Alexander, and Wilkes counties in its incorporation papers.

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The committee will do business in Watauga, Alexander and Wilkes counties and into Burke county. The REA suggested the in-

clusion to avoid any complications in the future, Dudley Bagley, director of the state REA, said.

Ohio

Would Prohibit Rate Increase

THE city of Columbus petitioned the state utilities commission on September 12th to order the Ohio Fuel Gas Company to observe the 48-cent rate ordinance, warning that any action by the company to hike the rate to 55 cents, scheduled to become effective September 15th, may be regarded as a violation of the utility law of Ohio. Counsel for the city, in a complaint, held that it would be illegal for the Ohio Fuel Gas Company to raise the rates of 20,000 customers of the Federal Gas and Fuel Company. It was inferred that possible criminal action may result if the gas company should hike the rate of one third of its customers before the utilities commission has ruled on the city's complaint.

The city held there was no legal basis of fact to permit the Ohio Fuel Gas Company to raise its rate 7 cents, because the Federal Gas

and Fuel Company never appealed from the original 48-cent rate ordinance passed by the city council in 1929. The city contends that an appeal filed by the Federal gas and Fuel Company from the second 48-cent ordinance passed in 1934 is still pending "awaiting further proceedings" before the commission, and to raise the rate before final action is taken on it would be highly improper and illegal.

Elsewhere in Ohio plans for a campaign for lower gas rates for all Ohio cities were made at a meeting held September 14th at Cleveland between city officials and representatives from Toledo, Akron, and Springfield. Meeting under the auspices of the Cities Alliance, an organization founded to coördinate gas rate information, the group voted to call a conference of representatives of municipalities in 10 states to consider a program of concerted national, state, and local action "some time before October 15th."

Oregon

Cuts Power Rates

THE Mountain States Power Company on September 10th filed rate reductions with Frank C. McColloch, state utility commissioner, aggregating a saving of \$75,000 to electric consumers. The principal schedules affected were the residential and commercial lighting rates, with an average reduction of 12½ per cent. While the principal reductions were made in the top steps of the schedules, the

larger consumers also were said to benefit by a reduction of the 3-cent rate for over 150 kilowatt hours per month to 2 cents.

McColloch said negotiations between the Mountain States Power Company and his department had been in progress for the past twelve months. McColloch declared a substantial increase in income, particularly during 1936, had made it possible for the company to grant a larger reduction than originally anticipated.

Pennsylvania

Requests Immediate Rate Reductions

CONTENDING that electric rates in Pennsylvania are "producing more than 6 per cent" net profit allowed by law, Governor George H. Earle on September 15th requested the state public service commission to proceed immediately for the reduction of all electric light and power rates.

In a letter to C. J. Goodnough, chairman of the commission, Governor Earle called attention to "the fact there has been an unprece-

dent increase in the consumption of electric power in Pennsylvania, and an unprecedented increase in the income and prosperity of privately owned power companies."

Governor Earle also directed the commission's attention to the fact that "no real rural electrification plan has ever come to Pennsylvania. The so-called Pennsylvania Plan, administered in part at least by a so-called joint committee of representatives of private utilities and of farm groups, has been run in the interest of the private power companies." He called upon the commission to withdraw from this joint committee and to take immediate

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steps for coöperation with the Federal Rural Electrification Administration, "so that farm homes in all parts of Pennsylvania may be electrified at the lowest possible cost."

Governor Earle told the state public service commission he would expect action upon these matters at the earliest possible moment.

Tennessee

TVA Ruling Surprises

ATTORNEYS for the Tennessee Valley Authority and nineteen private utilities were reported to be working at top speed to prepare arguments on the disputed constitutionality of the vast government enterprise. A surprise ruling of Judge John J. Gore in U. S. district court at Cookeville, Tenn., on September 11th gave them less than two weeks in which to submit briefs to the court on the question of whether the huge Federal agency is constitutionally sound.

The judge acted at the conclusion of a hearing on a motion of the TVA to dismiss a suit brought by the nineteen power companies. The suit attacked the TVA act as unconstitutional. Counsel for the authority claimed that

under the act any such suit brought against it must be brought in the northern district of Alabama. The claim was based on the fact that the act fixes the legal residence of the TVA in that district.

Attorneys had expected that Judge Gore either would sustain the motion and dismiss the suit or quash the motion and hear the suit. Instead, the court held the question of jurisdiction could not be decided until it is determined whether the act itself is constitutional.

An identical suit filed at Birmingham, seeking to restrain the government agency from further operation, was dismissed on September 9th in an order signed by Federal Judge David J. Davis.

The dismissal was requested by attorneys for the nineteen power companies.

Virginia

Refuses Power Probe

CORPORATION Commissioner H. Lester Hooker last month, after receiving a request from the Shenandoah Valley Electric Coöperative for an investigation of proposed wholesale rates to be charged by the Virginia Public Service Company, said that the commission was without authority to intervene. He said that the corporation commission has "no jurisdiction over private contracts between

the coöperative and the power company."

Mr. Hooker said he received a letter from D. W. Burrus, president of the coöperative, saying the rural electrification project to serve customers in seven valley counties had been halted as a result of the Virginia Public Service Company's failure to quote a "satisfactory" wholesale rate. The coöperative, which is constructing its own lines, sought to negotiate for the purchase of its current wholesale from the private company.

Wisconsin

Fights Sale of Power to Coöperative

A PROTRACTED legal battle between the Madison Gas and Electric Company and 450 potential rural power consumers near Middleton was reported in the making last month as the public service commission ordered the utility to sell power at wholesale to the farm coöperative forming there.

The company claims that it has never held

itself out as a wholesaler, either within or without its territory, and that it is a local utility, serving one central city and its immediate territory, and therefore cannot be compelled to furnish such service. The commission held that wholesaling was within the general service obligation of a utility company within the boundaries wherein it has professed to serve. There was said to be a possibility that the company would seek court action to prevent the commission from enforcing its order.

The Latest Utility Rulings

Sliding-scale Rate Plan Is Approved by Arkansas Commission

ONE of the criticisms by the public utilities generally made of regulation, said the Arkansas commission, and "not wholly without merit" is that under regulation whenever a base rate of return is fixed by a regulatory authority and the utility, through efficient and economical operation and the expansion of its business, earns more than the return fixed, all the excess is given to the consumer through further reductions in rates. Such a practice, it was said, to the extent that it has become established, has had a tendency to put a premium on indolence and inefficiency and to destroy initiative on the part of those managing public utilities.

The commission therefore expressed the opinion that when a rate of return is fixed for a public utility, any earnings in excess of that rate should be equitably distributed between the utility and the consumers. The commission continued:

This plan is not new. It was, a number of years ago, put into effect by the commission of the District of Columbia with very gratifying results. We believe that with a plan in effect such as the one above indicated, municipalities will be more interested in keeping down the franchise burdens of public utilities and at the same time we believe that the public utilities themselves will strive harder and put forth more effort to keep down their operating expenses and to increase the volume of their business.

There has become noticeable to this department a tendency upon the part of some public utilities to designedly increase their operating expenses in order to keep from making a reduction in rates, and, in the opinion of the department, the company under examination is no exception. There has been before the department one case where the management of a utility actually invited the city to levy a pole tax against it in order to increase operating expenses so as to avoid and forestall a reduction in rates. In the particular instance, the city levied a pole tax and did, thereby, forestall a reduction in rates.

The commission, however, was of the opinion that while it should put into effect a sliding scale of rates it should not do so without according the company and the city an opportunity to be heard upon the question.

In determining the basis for rates, the commission reduced the estimated cost of reproducing foundations for a well house, derrick, and pump, as not used and useful in the public service, stating:

While it is probably true that the company would not be expected to tear up or wreck this concrete structure or put down new foundations, this fact is no justification for the inclusion of the cost of the whole basin in the rate base. The basin is now only useful for foundations and it is worth no more to the company or to the public than would be the reasonable cost of adequate foundations for the well house, the derrick, and the pump.

Likewise in connection with an estimate of reproduction cost of a reservoir, the commission said that ordinarily in estimating cost of reproduction, consideration is given to the property as it is now designed and constructed and not to some other design or construction. In the case of the reservoir, however, where faulty construction was discovered after completion and a large amount was spent for the purpose of correcting the faulty work, it was said that the ratepayers should not have to make good the cost occasioned by the negligence and carelessness of those responsible for faulty construction.

Cash working capital, it was held, should not include taxes and interest and other items that are accrued monthly and set up and charged to operating expenses, since, in the words of the commission:

These items are only paid once a year and by accruing them the company will

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always have on hand sufficient funds out of which to pay them. *Re* *Yonkers Electric Light & P. Co.* (N. Y. 1934) 6 P.U.R. (N.S.) 132, 151; 2 Guiding Principles of Public Service Regulation, by H. C. Spurr, p. 232.

The commission thought that the depreciation allowance should be sufficient to cover only retirements caused by ordinary wear and tear and that a reserve to meet these contingencies should be set up out of revenues and that the cost of property retired for any other cause

to the extent not already credited at the time of the retirement to the depreciation reserve, less the net salvage, should be charged to the abandoned property account and amortized over a reasonable period of time. By this method the ratepayers of this decade would not be required to set up a reserve for improvements that might or might not be made in the succeeding decade. *City of Blytheville v. Blytheville Water Co.* (No. 15.)



Rate Problems on Change to Natural Gas

THE public utility company furnishing gas in and about Williamsport, Pa., in the year 1931 introduced natural gas into its system, which formerly had furnished artificial gas. Problems arising from the changeover are discussed by the state commission in a recent decision on gas rates.

The mere existence of the manufactured-gas plant, in the opinion of the commission, did not require its inclusion in a determination of proper rates even for standby emergency service. The commission said that the utility company, having decided to furnish its customers with natural gas, must so conduct itself that service from such a source would continue uninterrupted, as the consumers should not be burdened with carrying the capital expense of two different sources of supply; that is, natural gas and manufactured gas. The commission pointed out that if the plant were being reproduced and natural gas adopted as the source of supply, manufactured gas plants would not also be constructed. That a different conclusion might have been reached if original cost rather than fair value had been the object sought in the rate investigation was intimated by the commission.

In harmony with the above ruling the commission excluded from production system expense the cost of operating and maintaining the manufactured gas plant.

Allowances for operating expenses under ordinary circumstances, said the

commission, would be based upon average experience, but in this instance the company, which for many years served manufactured gas, had changed to natural gas as a source of supply. Complications resulted which made it extremely difficult for the commission to determine the allowable operating expense when the period under natural gas service was so short. The record failed to disclose what a proper labor cost was under natural gas operation, and for purposes of rate making the commission, therefore, adopted the most recent experience of the company for labor in 1933. Similar disposition was made of certain other operating expense items. In some cases, however, where the change to natural gas would not appreciably affect the expenditures, weight was given to the experience of the company when furnishing manufactured gas, as in the case of meter maintenance cost.

As to the cost of marketing natural gas, the commission said:

It was but natural for respondent to make every effort to attempt to market to the utmost extent the natural gas which it now serves in place of the manufactured gas. However, such activities frequently cause heavy initial expenditures for the development of business which extends over a long period into the future, without the expectation that substantial beneficial results will be realized in the years in which the expenditures are made. Thus, we hold that present consumers should not be burdened with the high cost of obtaining new business

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without, at the same time, receiving some of the benefits resulting from increased revenues to the company. We, therefore, adopt an allowance of \$15,000 for this account as reasonable for rate-making purposes for the present and immediate future ratepayers.

The commission allowed the company to amortize over a 5-year period the expense found properly attributable to changing over consumers' appliances from manufactured gas to natural gas.

No allowance was made for amortizing the investment in the generating plant. The commission distinguished the present case from those cases in which the use of new inventions by a company has resulted in great benefit to consumers and where the company should not be penalized because of its policy in utilizing such inventions by

refusing to permit recoupment in some way of the investment in the old equipment.

A gate rate for natural gas was established instead of fixing rates on the basis of all the operations of natural gas producing companies affiliated with the distributing company. The commission found that if it considered the entire operation, the cost of natural gas would exceed the cost of the previously used artificial gas. It was said that a substitution of natural gas for manufactured gas which resulted in an increased cost to consumers of approximately 30 per cent without any corresponding benefit was not justified. *Himes et al. v. Pennsylvania Power & Light Co.* (Complaint Docket Nos. 9046-9048, 9050).



Wholesale Rate to Coöperative Organization

THE Wisconsin commission has taken the position that electric utility companies should offer a wholesale rate for service to rural coöperative organizations. The commission is of the opinion that the functional use of service by the various coöperatives is such as legally to justify a separate and distinct rate classification, provided that a rate schedule can be designed which is sufficiently comprehensive to give proper consideration to the differences in load characteristics of the various customers so as to prevent discrimination between customers within the classification.

The commission did not see any valid reason for refraining from offering a general rate for service to this type of customer on grounds that the customer might not be financially responsible and might neglect its lines to the point of interference with the company's service to other customers. Such dangers, if they may exist, it was pointed out, could be met by the application of reasonable rules and regulations as in the case of other classes of customers.

The Wisconsin State Rural Electrification Coördination Committee, in a

complaint against the Lake Superior District Power Company, contended that the Rural Electrification Administration would not approve a loan to a coöperative association where wholesale energy could not be obtained at an average cost of 1.5 cents per kilowatt hour or less. The commission said:

However, there seems to be some dispute in the record of one of the similar proceedings before the commission involving another company, as to the firmness of this requirement. In any event, as we construe our duties under Wisconsin statutes, major consideration must be given to the cost of furnishing such service and the maintenance of a fair relationship between the level of such a rate and the levels of rates available to other classes of customers.

The commission approved rate schedules containing a demand charge and energy charges ranging from 3 cents net per kilowatt hour for the first 1,000 kilowatt hours used per month to .9 cents per kilowatt hour for quantities in excess of 50,000 kilowatt hours used per month. *Wisconsin State Rural Electrification Coördination Committee v. Lake Superior District Power Co.* (2-U-993).

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Electric Extension Authorized over Objection of Coöperative

THE Wisconsin Public Service Corporation was authorized by the state commission to extend its lines to prospective customers who desired service notwithstanding objections by the Rural Electrification Coördination Office, which requested that the application for authority to extend be denied on the ground that a coöperative project contemplated incorporating the proposed extension in its own program of rural electrification.

At the hearing it developed that the coöperative project was composed of two factions, those along the proposed extension who had broken away and then desired service from the public utility corporation and another group

who insisted that the others remain with the coöperative program.

To the commission it appeared that the geography of the situation should be a compelling factor in its decision. The two groups were separated by a considerable expanse of forest preserve. The commission did not find that the remaining members of the coöperative organization would be insufficient to obtain a loan for their project, and it appeared reasonable to the commission to permit each group to obtain service in accordance with the wishes of its majority rather than to require those along the proposed extension to forego immediate service. *Re Wisconsin Public Service Corp. (CA-186).*



Discrimination in Denying Service to Poor Persons

THE Montana commission vigorously condemned the practice of a municipal water plant in discriminating against consumers less able to pay and in favor of more wealthy and influential users in the matter of denying service for nonpayment.

One consumer, of means, was shown to have been given every consideration while delinquent in a comparatively tremendous amount, while another consumer, irregularly employed for very short periods at unusually low compensation all during the depression, had been summarily denied service, despite his offer of partial payment. The commission said:

The water commission and clerk were so bitter and cruel in their persecution of the witness, that anyone who might offer him water was threatened with discontinuance of his water service, yet water, as the officials of the waterworks should understand, is absolutely necessary to life. The witness Gonyea's service should be restored at once, and it is hereby ordered. The commission recognizes his honesty, sincerity, and veracity, and knows that he will conscientiously begin payment upon his delinquent account, as should all other delinquent users in a position to do so.

Another customer, nearly seventy years of age and a taxpayer since the founding of the city, but now a county charge, was denied service without consideration and "more despicable, more lowly, and more contemptibly than he would have been by any of the predatory and greedy privately owned utilities."

The commission said that a municipal plant belongs as much to such a taxpayer as it does to the water commission and its clerk, and public servants should be reluctant to adopt the universally condemned practices of "profit-mad private owners."

The commission ruled, in ordering a 25 per cent reduction in water rates, that since the city had completely paid for its plant and had a substantial surplus in its treasury, there was no longer any necessity for any greater income from the property than sufficient to pay all operating expenses together with a fair return on a reasonable amount of working capital. *Water Users of City of Livingston v. Livingston Municipal Water Works (Docket No. 2054, Report and Order No. 1676).*

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Auxiliary and Breakdown Rates and Service

OPINIONS were filed by Chairman Maltbie and Commissioner Van Namee of the New York commission on the subject of rates for auxiliary and breakdown electric service, disposing of various questions relating to the service rules and regulations.

The electric companies were held to be within their rights in denying consumers the privilege of operating private plants in parallel with the utility service. Chairman Maltbie pointed out that in the case of other customers the electric utility would not be required to carry only the most unproductive part or the part its competitors choose not to carry. He said in part:

A central station company should be required to supply any part of the wiring system of a consumer provided such wiring is completely segregated, and provided further that whenever such segregated part is used the electric energy is to be supplied by the central station company. But a consumer should not be permitted to switch any unsegregated part of his system to the central station company unless all of his system is so connected.

Chairman Maltbie said that a private plant customer should be permitted the utmost freedom in contracting for demand so far as his own use is concerned, and, if he wishes to contract for more than the capacity of his generating plant, he should be allowed to do so. On the other hand, the private plant owner who desires not only breakdown and auxiliary service but is also engaged in selling current to others is not entitled to the same unlimited service as the private plant consumer who does not resell to others. He said:

If he does not choose to provide a plant equal to the peak load of the system which he supplies, he should segregate a portion of the system and turn it over to the central station company for its service. Equipment should be provided to limit the demand to

the amount contracted for in such cases, so that under no circumstances may the actual demand exceed the amount specified in the contract.

Commissioner Van Namee said that the electric companies should not only continue their policy of limiting the contracted-for demand to the capacity of the private plant but should require installation of equipment to positively prevent contracted-for demand being exceeded except to private plant operators who do not sell electrical energy and who should be granted unlimited standard service and nonstandard service according to present practice.

The demand charge was referred to by Chairman Maltbie as "an unusual and exceptional form of charge." He said that if it were approved, it should be limited and only those costs should be included that clearly and unquestionably belong in a demand charge, all other costs being covered by the energy charge.

He pointed out that a demand charge is seldom encountered in private business, for unless there is an element of monopoly it is not possible for anyone selling a service or a commodity to make a customer pay a fixed amount in addition to the commodity charge. He observed, however, that everyone is familiar with the fixed dues levied by clubs and the cover charge made in some restaurants. Each is somewhat like a demand charge, but there is even here an essential difference between such businesses and an electric utility. The former do not recognize any obligations to meet any demand upon them, whereas the latter virtually stand ready to render any amount of service whenever so required. Commissioner Van Namee also approved a demand charge. *Re The New York Edison Co. Inc. et al. (Case No. 8622).*

NOTE.—The cases above referred to, where decided by courts or regulatory commissions, will be published in full or abstracted in *Public Utilities Reports*.

Appendix

Important addresses on questions of public interest delivered at the annual convention of the Section of Public Utility Law of the American Bar Association at Boston, Mass., August 25 and 26, 1936.

Necessity of Coöperation in Regulation of Utilities

By PROFESSOR JOHN J. MURRAY*

TO us who are members of the legal fraternity and who are particularly concerned with public utilities it is well to remember that there are fundamentally three groups. The first group of us represent the regulated, the second group of us represent the regulator, and both of us are subjected to a third group, the judiciary, who pass upon the merits of our controversies. We all three groups, therefore, must coöperate rather than antagonize if the best results to all interests are to be attained. We should be influenced by the economic and legal merits of the contentions of each other, rather than be influenced or even prejudiced because of the group to which one of us might belong. We must remember that there are the service consumer, the employee, and management, as well as the investor, whose interest must be considered.

Massachusetts is historically famous for its institution of public utility regulation, and she is renowned in her wealth of material knowledge of her public utilities. We must not, however, rest wholly and inactively upon our laurels. We must make use of this accumulated data. We must utilize this vast fund of material fact for the benefit of all concerned. It is obvious to any student that public utility corporations have prospered, in many instances excessively so, in our commonwealth. If I may presume, I should like to suggest

to you ladies and gentlemen that times have changed. It is my humble observation that the present era is most significant in that a much greater number of us know much more, or should I say try to know much more, about a great many more things than ever before. This means that mental competition is undoubtedly more vigorous than ever in the history of our country. The day is passed, I believe, of domination by limited interests of our public thought and direction.

SOME believe that a critic who suggests changes of regulation is a cynic, or radical, or crack-pot, but this is not so. It would be well for all of us to study not only the evolution of public utilities law *in substantio*, but also the interests which may have influenced the development of such law. For instance, the possible influence of utility interests in the enactment of a series of statutes in our commonwealth with reference to municipal ownership might well be studied. I cannot of course develop this subject in this talk, but believe me when I say it is most difficult, expensive, and well-nigh impossible for a municipality in this state to reasonably compete with private industry, even where the private utility company may be giving poor service, charging excessive rates, or both. Indeed, it might be well in this and other states if our regulatory commissions endeavored to amend the laws in the interest of the public and to so regulate as to bring the subject of regu-

*From the address of welcome by the chairman of the Massachusetts Department of Public Utilities.

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lation before our third group, the judiciary.

I believe that the most substantial establishment of our public utilities of the future will be best accomplished through a conscious recognition by all of us that corrections and improvements can and must be made, with a consideration of the contentions and interests of all parties concerned. We all recognize that in economic progress young and new thought, principles, and individuals are the dynamic forces of accomplishment. I do not know, but it may be that changes are desired and inevitable. It is barely possible that some of us in the category of regulators may have become "company minded," maybe not. In any event a new and thorough study and analysis of the status and the data on public utilities corporations in our communities might be productive of intelligible information.

WE must remember that the consumers are entitled to the best possible service at the lowest possible cost commensurate with a fair return to capital invested in the public utility industry.

And this fair return must be a sufficiency to attract fresh capital into the industry.

And so in this state of Massachusetts, historically famous as a regulator of public utilities, we may expect in this era of new enlightenment a complete and historical analysis of the financing, operating, and charging by our public utilities companies, followed by any equitable adjustments which may be found necessary or desirable. Thus, ladies and gentlemen, it is well to remember that Massachusetts is not only the historical origin of public utilities regulation, but that it is also a progressive and active regulatory state.

Legal Aspects of Governmental Regulation of Prices in Industry

By GEORGE R. GRANT*

SINCE the organization of this Section in 1917 it has been the custom of the chairman to address the members at the first session of each annual meeting. I trust you will bear with me while I make some observations and state some views which are my own and in no way intended to represent the views of the Section.

For a considerable period of time there has been a great deal of talk and much has been written on the subject of personal liberty and the Constitution. Turmoil and excitement have prevailed in the ranks of so-called defenders of the Constitution on the one hand, and of those who advocate certain New Deal theories of public welfare on the other hand. It may be well to step out of the atmosphere of politics to examine the

present state of the law of the land upon the very important question of the right of government to regulate the prices of industry. Long a matter in which opinions differed widely, this became more confused when the Supreme Court, by Mr. Justice Roberts, in the *Nebbia Case*¹ approved price regulation called for by the Milk Control Act of New York.

Eminent economists, statesmen, and business men have striven for a plan to extricate business from its troubles and to safeguard its future. Meanwhile there has been a rising tide of regulation spreading out over every phase of American business. This has seemed to be very largely accounted for by the activities of overzealous partisans. As lawyers we are more interested in the attitude of the courts toward this matter than in the politics of the situation. A review of the pertinent cases and of the

*Address of the chairman of the Section of Public Utility Law.

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legal principles which are involved may be helpful.

UNDER the old English common law the business regulated as to prices or rates except that of the innkeeper and the miller was largely of that type which today we call public utilities, such as ferries, hackney coaches, and enterprises enjoying some governmental privilege or monopoly or both. As to the public inns, they constituted about the sole refuge at night for travelers who sought not only food and shelter but protection from bandits. In other words, from the standpoint of government such places were of great importance as adjuncts to public safety. Innkeepers were called public servants "having the privilege of entertaining travelers and supplying them with what they want."² As to grist mills, they were operated largely by sanction and permit of the large landowners, who ruled the tenants.

Lord Hale pointed out that regulation was the inevitable result of a governmental concession or privilege. On the other hand, the English Parliament regulated prices and wages pretty much as it wished. It passed laws of attainder and took property for private purposes and without due process of law under an arbitrary power. Such laws were mainly unfair and many of them were repealed.

In passing upon prescribed rates Lord Ellenborough said:³

The general principal is favored both in law and justice that every man may fix what price he pleases for his own property or the use of it.

Some of our early legislatures, prior to the adoption of our Constitution, undertook to exercise price-fixing power. Today, however, no one considers that he devotes his property or his business to the public use, or clothes it with a public interest, merely because he manufactures and sells goods to the public.⁴ For many years following the independence of the United States it was commonly supposed that a general power in the states to regulate prices was inconsistent with constitutional liberty.⁵

MANY years ago most of us read the decision of the Supreme Court in *Munn v. Illinois*.⁶ Some of us have re-read it and a few have probably really studied it and perhaps have agreed with the able dissenting opinion of Mr. Justice Field.

As we examine the case today in the light of recent decisions and the present trend of regulation over business and private property, interesting questions come to mind.

What would have been the effect upon the present trend of regulation had Justice Field prevailed? He said:

I deny the power of any legislature under our government to fix the price which one shall receive for his property of any kind. If the power can be exercised as to one article, it may as to all articles, and the prices of everything, from a calico gown to a city mansion, may be the subject of legislative direction.

He declared that private buildings used for private purposes cannot be deemed to be public institutions even by constitutional amendment and that "one might as well attempt to change the nature of colors by giving them a new designation."

The court went back 200 years for its authority to a treatise of Lord Chief Justice Hale of England, who was the first to use the phrase "affected with a public interest."⁷ The pertinency of the conclusions of Lord Hale to the *Munn Case* is not apparent. There is nothing in the language of that eminent English authority which indicates that the words "affected with a public interest" mean anything but operated under a public grant.

A study of the facts in the *Munn Case* indicates a lack of concession, special privilege, or legal monopoly, nor is it apparent that there was a dedication of the property to the public use. However, Justice Waite, who wrote the court's opinion referred to it in a later decision⁸ as involving a "virtual monopoly," and Mr. Justice Bradley, who concurred with the majority in the *Munn Case*, referred to that case in a later decision⁹ as involving a "practical monopoly."

JUSTICE Roberts in applying the theory of the Munn decision to the Nebbia Case concluded that the term "affected with a public interest" means "subject to the exercise of the police power" and that nothing more is intended by that expression.

At present it seems to come down to this, that being affected with a public interest means being subject to the police power, and being subject to the police power means being affected with a public interest, subjecting an industry to price fixing. This reasoning in a circle is not helpful in answering the question—When is property affected with a public interest, and when does the police power apply to permit the regulation of prices in businesses outside the realm of public utilities? The language of some of the decisions, especially that of the Nebbia Case, indicates that the answer is "whenever the legislature so wills." That would be in every instance whenever the voters exert sufficient pressure on the legislature. Future decisions will determine to what extent the court will allow legislatures to fix prices in industries claimed to be affected with a public interest.

Munn v. Illinois has been cited by the court in many decisions relative to prescribed rates for public utilities, again evidencing that the court in such cases has ignored the distinction between public interest in property and a public use of property. Likewise state courts have repeatedly based their decisions upon the theory of the Munn Case, and we find such language as the following:¹⁰

When the owner of property devotes it to a public use, he, in effect, grants to the public an interest in such use, and must, to the extent of the use, submit to be controlled by the public, for the common good, as long as he maintains the use.

THESE decisions have been made in Illinois, Alabama, Wisconsin, Pennsylvania, and many other states. Thus, from what has been very logically termed a misconstruction of Lord Hale's meaning of the term "affected with a public interest" there has spread out over the land a doctrine relative to the

governmental regulation of private business, a late expression of which appears in the Nebbia decision.

Mr. Justice McKenna said, referring to the Munn Case in a much later decision,¹¹ that the private elevator property has become "public warehouses" by constitutional amendment and act of the legislature and that which had been strictly private property became public property, at least so far as its use was concerned.

The court created an uncertainty in its decision in *Munn v. Illinois*. Its purpose was to decide when private industry can be regulated by the state as to prices. It considered two principles; namely, the old common law idea that regulation of prices naturally results from a voluntary dedication of private property to a public use under conditions of governmental grant or privilege of some sort; and, second, that regulation results from a condition of economic importance of the industry involved.

It is entirely reasonable to assume that if Justice Field's opinion had prevailed, the court in 1891 would have decided the New York state elevator cases in accordance therewith.¹² The issue in those cases was the constitutionality of a New York act to regulate grain elevators similar to the act of Illinois involved in the Munn Case. The court of appeals of New York declared the act constitutional by the authority of the Munn decision. It found that special conditions in the business of elevating grain justified legislative control. At the same time the court stated that no general power resided in the legislature to regulate the prices charged for commodities or services in private business. The court went so far as to say that the elevators are indispensable instrumentalities of the carriers. Referring to the Erie canal, through which much of the grain passed from Buffalo to New York, the court said that whatever impaired the usefulness of that canal as a public highway involved the public interest. Its attempt to associate the elevators with the carriers seems something of an ad-

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mission that Lord Hale intended his term "affected with a public interest" to apply solely to enterprises which we now call public utilities. The Supreme Court by Mr. Justice Blatchford affirmed and approved the decision of the New York court.

Mr. Justice Brewer dissented in the New York elevator cases and said:

The vice of the doctrine is, that it places a public interest in the use of property upon the same basis as a public use of property. . . . nor can I believe that the control of the public over one's property or business is at all dependent upon the extent to which the public is benefited by it.

Commenting upon the idea of monopoly in the elevator business Justice Brewer stated that there was no legal monopoly involved and that any monopoly in fact which existed might be broken, thus making unnecessary any legislative interference. He expressed the thought that the elevators are not in any sense carriers and if they facilitate the carriers so do the packing and boxing of goods. It was Justice Brewer's expressed thought that the time was not far distant when the courts would declare that government can prescribe compensation only when it grants a special privilege. Justice Brewer's prediction did not come true entirely as evidenced by decisions herein later discussed, including the *Nebbia* decision.

WHERE lies the dividing line between public utilities and other business enterprises whose property is now claimed to be affected with a public interest? Some of the state courts have answered this by distinguishing between public use and public interest.¹³ Has the *Nebbia* decision eliminated the distinction? How far is the old-time difference between public utility business and private business to be forgotten and how far is regulatory law likely to extend over private business as to the prices of commodities? The Supreme Court has answered some of these questions in specific decisions which appear to be directly contrary to its decision in the *Nebbia* Case.¹⁴ It is not unlikely

that the court will be called upon to consider again some of the same issues.

In the Minnesota Mortgage Moratorium Case¹⁵ and the New York Milk Control Case,¹⁶ both involving police powers of the states, the court took a liberal attitude in its 1933-34 term. There are other cases on the court's docket involving the exercise of that power which have taken on added significance and importance. They involve state statutes which have undertaken to enter upon prior fields of regulation and which involve additional questions of constitutional law. The Fair Trade Act of California and the New York Unemployment Law are in that list. The future decisions of the court on such issues will be awaited with great interest.

The legal question always involved is whether or not the regulation violates due process intended to be safeguarded by the Fifth and Fourteenth Amendments. The inquiry of the court concerns solely the lawfulness of an act and does not consider the question of its wisdom. That is a matter for determination by public opinion. The *Nebbia* decision holds that no constitutional principle prohibits price legislation. This reflects the thought of Mr. Justice Holmes in his dissent in the theater ticket case.¹⁷

THE validity of a price restriction on resale of theater tickets became an issue before the Supreme Court in 1927. The court held that the theater business is private business and that tickets are not subject to price regulation as to sale or resale. This was on the theory that a business or property in order to be affected with a public interest must be devoted to a public use and its use thereby in effect granted to the public.

This decision is contrary to an opinion of the justices of the supreme judicial court of Massachusetts in 1924 on the same subject. The justices held that theaters are affected with a public interest and devoted to a public use, and further that they have an intimate relation to the health, safety, and good order of the community. The justices ac-

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cordingly pronounced as reasonable and constitutional a proposed regulation to limit the resale prices of theater tickets.¹⁸

REFERENCE to the regulation of private property alleged to be "affected with a public interest" properly includes both state and Federal regulation, the first under that retained power of sovereignty commonly called the police power, and the second under the commerce clause of the Federal Constitution. The decisions of the Supreme Court upon this subject from the date of the *Munn* Case to that of the *Nebbia* Case have applied largely to the right of the states to regulate and the question has been usually one of due process under the Fourteenth Amendment. The present tendency by congressional action is toward centralization at Washington of regulatory power over all industry, as evidenced by the National Industrial Recovery Act, the Agricultural Adjustment Act, the Tennessee Valley Authority, the Public Utilities Act, the Guffey Coal Bill (which attempted to apply the same type of governmental control over one industry which the National Industrial Recovery Act attempted to apply over all industry), the Wagner Labor Bill, the Social Securities Act, and the Federal Housing Act, and others too numerous to mention. The court has held several acts named above to be unconstitutional and void. It is not unlikely therefore that the tendency of Congress to pass laws regulating industry may be lessened.

In its decision invalidating the Coal Act, the Supreme Court did not decide whether the Federal government has the power to regulate prices of commodities sold in interstate commerce. It declared that the price-fixing provisions of the Bituminous Coal Conservation Act are unconstitutional because inseparable from the provisions governing production and labor.

As indicating a possible trend of thought it is interesting to note that Mr. Chief Justice Hughes in a sepa-

rate opinion differed from the majority on this question of separability and declared that the price-fixing provisions could be sustained notwithstanding the invalidity of the regulation of production. As an illustration of the power of Congress to control charges in interstate commerce he referred to the Interstate Commerce Act. This illustration may indicate that from a standpoint of the regulation of prices the Chief Justice makes no distinction between public utilities and other business enterprises not enjoying the same type of privilege and concession as a public utility.

Mr. Justice Cardozo dissented and was of the opinion that the price-fixing provisions were valid and could be sustained independently of the labor provisions of the act. He said:¹⁹

I am satisfied that the act is within the power of the central government in so far as it provides for minimum and maximum prices upon sales of bituminous coal in the transactions of interstate commerce and in those of intrastate commerce where interstate commerce is directly or intimately affected.

He pointed out that this does not mean that prices may be fixed for arbitrary reasons or in an arbitrary way, and said that the congressional power is subject to due process like the police power of the state. Citing the *Nebbia* Case²⁰ he said:

There a statute of New York prescribing a minimum price for milk was upheld against the objection that price fixing was forbidden by the Fourteenth Amendment. We found it a sufficient reason to uphold the challenged system that "the conditions or practices in an industry make unrestricted competition an inadequate safeguard of the consumer's interests, produce waste harmful to the public, threaten ultimately to cut off the supply of a commodity needed by the public, or portend the destruction of the industry itself."

WITH no rule for determining just what types of private property are "affected with a public interest" or are "clothed with a public interest" or what types of private property are of "public consequence" one's mind naturally turns to essentials of life, meat, and all food stuffs; boots, shoes, and clothing; cot-

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ton, woolen, and silken fabrics; all kinds of machinery together with utensils of every kind; books and periodicals; drugs, medicines, and chemicals; iron and steel; lumber and all building materials. In fact it is difficult to imagine any enterprise or business of the community at large in which the public has not an interest or many not acquire an interest under changing circumstances.

At the time when the term "affected with a public interest" seemed to mean "dedicated" by the owners to public use or enjoying a public franchise or concession, it was not difficult to separate the businesses which were properly subject to rate or price regulation and we called them public utilities. Now the term "affected with a public interest" seems to apply to any business which has assumed a degree of importance in the public mind. The legislature seems to be restrained only to the extent of passing price-fixing statutes which are not arbitrary.

On the other hand, the court has ruled that a business is not "affected with a public interest" because of size or because the public is concerned about it.²¹ This pronouncement is contrary to the rule in the *Munn Case* as are numerous subsequent decisions.²²

THE pressure is strong upon all legislative bodies to declare that first one and then another business is affected with a public interest. If such pressure should extend in the direction of drugs or shoes or any other articles of universal use what will prevent regulation as to their prices? The power to prevent rests solely with a Supreme Court and it will exercise that power only if it finds that the statute in question is arbitrary or capricious. It seems likely that the court would find a statute arbitrary or capricious which sought to regulate prices of luxuries such as diamonds or furs. Such articles are not in universal use and cannot possibly affect the public welfare.

That the court has considered the possible spread of legislative regulation to all human endeavor and to the prices of

nearly all commodities is indicated by its language in several cases.²³ The charge that all affairs of life will become subject to legislative domination if enterprises one after the other are declared to be affected with a public interest, has not deterred the court in such declarations when in the judgment of the court the circumstances of public welfare warranted.

THE difficulty, therefore, today is to determine when is a price-fixing statute arbitrary or capricious. It is not arbitrary solely because it fixes a minimum price for an article of trade. The New York Milk Act did that and was approved. The deduction is that the character of the article regulated, together with circumstances at the time, are the determining factors. In fact, the court has called it rudimentary to say that measures of government are determined by circumstances. The court has been at pains to point out that it is not possible to classify businesses as to which regulation of prices can be declared arbitrary²⁴ and further that upon proper occasion and by appropriate measures the state may regulate the prices of any business.²⁵

MORE than ten years earlier the court in discussing the question of freedom of contract in a case involving a minimum wage law held that although there is no such thing as absolute freedom of contract such freedom is the general rule and restraint the exception; "and the exercise of legislative authority to abridge it can be justified only by the existence of exceptional circumstances." The New York Court of Appeals in March of this year relied upon that language of the Supreme Court.²⁶ The Supreme Court has upheld the decision of the New York court.²⁷ Chief Justice Hughes, however, joined in the dissent and said:

I can find nothing in the Federal Constitution which denies to the state the power to protect women from being exploited by overreaching employers through the refusal of a fair wage as defined in the New York statute and ascertained in a reasonable man-

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ner by competent authority. . . . When there are conditions which specially touch the health and well-being of women, the state may exert its power in a reasonable manner. . . . The distinctive nature and function of women—their particular relation to the social welfare—has put them in a separate class.

The court has decided that food stuffs,²⁸ clothing, ice,²⁹ and gasoline³⁰ are not to be regulated as to prices. Milk, on the other hand, may be regulated as to price, and irrespective of any health consideration. The same is true of fire insurance which involves purely personal contracts.³¹ All articles such as ice, food, clothing, gasoline, and milk are necessities of present-day life, as perhaps is fire insurance, and seem to be affected with a public interest. Legislatures have "honestly" said so. The court has agreed as to milk and fire insurance.

A GREAT deal of the machinery of modern business relies upon gasoline. It might reasonably be said to be affected with a public interest. Even the delivery of milk itself would be seriously handicapped if the supply of gasoline should be interrupted for one day. The legislature of Tennessee considered that gasoline is affected with a public interest. The Supreme Court ruled otherwise and denied the right of the state to regulate the prices of gasoline.³² Will the price-fixing issues which we thought settled be re-tried?

Going back again to the old case of *Munn v. Illinois*, one of the most significant paragraphs of the decision states:

It presents, therefore, a case for the application of a long-known and well-established principle in social science, and this statute simply extends the law to meet this new development of commercial progress.

That language seems pretty well tuned to the recent increasing tendency on the part of the Federal government to attempt regulation of private business of all kinds. Mr. Justice Brandeis in his dissenting opinion in the Ice Case³³ quoted it to bring out his thought "that the conception of a public utility is not static."

THE Ice Case involved a statute of Oklahoma making the manufacture of ice a public utility business dependent upon a certificate of public convenience. The court in an opinion by Mr. Justice Sutherland ruled that it was not such a business, apparently on the ground that the welfare of the state of Oklahoma did not depend upon it. Chief Justice Pound of New York distinguished the *Nebbia* Case from the Ice Case in part on the ground that the welfare of the state of New York largely depended upon the milk business whereas the welfare of the state of Oklahoma did not depend upon the ice business. Justice Brandeis was of the opinion in the Ice Case that the matter of converting a private business into a public one is primarily for the determination of the state legislature, apparently on the theory that "the business of supplying to others, for compensation, any article or service whatsoever, may become a matter of public concern." His minority view in that case became the view of the majority in the *Nebbia* Case.

The thought running through Justice Brandeis' dissenting opinion in the Ice Case and the manner of its expression are similar to that of Justice Roberts' prevailing opinion in the *Nebbia* Case. To illustrate—Justice Brandeis said:

The notion of a distinct category of business "affected with a public interest" employing property "devoted to a public use" rests upon historical error.

While Justice Roberts said:

It is clear that there is no closed class or category of businesses affected with a public interest.

Said Justice Brandeis:

In my opinion, the true principle is that the state's power extends to every regulation of any business reasonably required and appropriate for the public protection. I find in the due process clause no other limitation upon the character or the scope of regulation permissible.

Said Justice Roberts:

There can be no doubt that upon proper occasion and by appropriate measures the state may regulate a business in any of its aspects, including the prices to be charged

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for the products or commodities it sells. So far as the requirement of due process is concerned, and in the absence of other constitutional restrictions, a state is free to adopt whatever economic policy may reasonably be deemed to promote public welfare. . . .

Said Justice Brandeis:

While ordinarily free competition in the common callings has been encouraged, the public welfare may at other times demand that monopolies be created. Upon this principle is based our whole modern practice of public utility regulation.

It is interesting to note that Mr. Justice Brandeis in another case concurred in the conclusion that a private business may not be regulated into a public utility.³⁴ He said:

Consistently with the due process clause of the Fourteenth Amendment, a private carrier cannot be converted against his will into a common carrier by mere legislative command.

It is difficult to reconcile this concurrence by Justice Brandeis with his dissenting opinion in the Ice Case, *supra*, in which he held after an extensive field survey that the property of an ice company is affected with a public interest and therefore subject to regulation for the public good. That results, however, for all practical purposes in saying that such a business is a public utility, and in spite of the fact that the owners do not hold themselves out to serve the public.

The liberal publication, "*The Nation*" in its issue of April 13, 1932, editorially commented upon the decision in the Ice Case, with particular reference to the dissenting opinion by Judge Brandeis. Said that editorial:

The fight is on. Forces will be aligned behind both Justices Sutherland and Brandeis. Those who believe in a planned economy will oppose the mandatory economy of the majority opinion. Therefore let us hope the next time a name is sent in to the United States Senate for appointment to the Bench the Judiciary Committee will confront the nominee with the Sutherland and Brandeis opinions.

"*The Nation*" must have been consoled by the court's decision in the Nebbia Case.

Is it within the competency of the state to fix a compensation which an individual may receive for the use of his own property in his private business or for his services in connection with it? It was long believed that a declaration by a legislature or by a constitutional convention that certain private property used for private purposes shall be deemed a public institution could not rightfully make it so; that private business may not be converted into public business by legislative fiat.³⁵ Can it be held that property loses its private character as soon as it becomes generally useful?

Under the guise of highway regulation the state of Texas attempted to regulate the rates of private truckmen.³⁶ This had the appearance of an attempt to circumvent a previous decision of the Supreme Court that a private business may not be made a public utility,³⁷ and indirectly to call a private carrier a common carrier. If the state may accomplish indirectly what the Constitution prohibits it from accomplishing directly the idea of the protection of private property by the Constitution is a meaningless gesture.

We know that the state may take private property for public uses by paying just compensation therefor. It may tax private property for the support of government in such a manner as to take the property. It may control the use of such property to protect the rights of others. All legislation for these purposes constitutes a legitimate exercise of the state's police power. There is no end of such legitimate power, the object of which is peace, safety, and health of the community. All businesses are properly subject to some measure of public regulation.³⁸ No regulation at all would be very bad. On the other hand, it may develop that too much regulation is even worse.

As stated by Mr. Justice Roberts in the *Nebbia* Case, no business has been so thoroughly regimented and regulated by the state of New York as the milk industry. It was regulated as early

as 1862, fifteen years before the date of the decision in *Munn v. Illinois*. This early regulation was in the interest of public health. Since that date it has been progressively regulated for a like purpose. Quarantines have been imposed against bovine tuberculosis; examinations have been required to prevent Bangs disease; the conditions and surroundings of barns and other farms buildings have been regulated; all in the interest of public health.³⁹ In 1933 the Agriculture and Markets Law was amended in such a way as to regulate the prices for milk. This was the first attempt of the state to regulate prices in that industry.

New Jersey, Pennsylvania, Virginia, and Washington have passed laws regulating the price of milk.⁴⁰ Such laws have been declared constitutional in New Jersey and Virginia.⁴¹ The omnibus act of Washington which undertook the regulation of all agricultural products was held defective by the state supreme court.⁴² The court stated, however, that an act similar to the Milk Control Act of New York would be constitutional, even though it declared milk in Washington state to be not a basic commodity.

THE same court passing upon another phase of the same statute, however, "doubted if the fixing of prices for melons would be a reasonable exercise of police power."

Thus it is clear that the New Jersey, Virginia, and Washington courts have followed the authority of the *Nebbia* Case in applying the test of reasonableness to the extension of police power for the regulation of the milk business.⁴³

Some of the Canadian provinces are regulating the production and sale of milk not merely as an industry affected with a public interest but actually as a public utility.

The Supreme Court held that the milk industry is not a public utility. But of what importance is the differentiation between a public utility and another type of business affected with a public interest? The sole question

seems to be in such cases, when is price regulation arbitrary? The same test is applied to determine the lawfulness of prescribed public utility rates.

State legislation to regulate the price of milk may have surprised Dr. Clyde L. King, one time Chief of the Dairy Section of the Agricultural Adjustment Administration, who stated a number of years ago on the subject of milk prices that they cannot constitutionally be fixed by statute or commission since the business is a strictly private industry.

FOLLOWING the *Nebbia* Case other issues have gone to the Supreme Court dealing with the reasonableness of administrative orders issued by the New York Milk Control Board. The court held that one who complains that regulations of the board are unreasonable should first seek relief before the board itself for modification of such regulations before bringing suit.⁴⁴ The court also held that New York cannot discriminate against milk from other states where a price lower than the required minimum was paid for it on the theory that this would be a burden on interstate commerce.⁴⁵ The court has likewise held that fixing a price differential under the New York Milk Control Act in favor of independent dealers and against dealers having a well advertised trade name is a valid exercise of state power.⁴⁶ In another case the court held that a differential in the price of milk fixed under the New York Milk Control Act and upheld as in favor of independent dealers engaged in the business prior to the date of the act, cannot constitutionally be denied to like dealers entering the business subsequent thereto.⁴⁷

IN Maine the legislature provided for a bonding of milk dealers and the state supreme court in the *Old Tavern Case*⁴⁸ refused to apply the *Nebbia* decision. It adhered to its much earlier decision in the *Latham Case*,⁴⁹ which twenty years before had held unconstitutional a statute requiring milk dealers to pay the producers semimonthly or be subject to fine. The Maine court

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held that the purpose of the statute was to give the milk producers an advantage in the collection of bills not granted to dealers in other products, and that the act was not to promote the public health, hence that the law amounted to class legislation.

Judge Pound of the New York Court of Appeals criticized the Latham decision in the Perretta decision.⁶⁰ Concerning the Old Tavern Case it has been questioned whether in 1935, twenty years after the Latham opinion, the court should have stood by that precedent on the doctrine of *stare decisis*, or whether in the light of the Perretta and Nebbia cases it should have considered that the milk business in Maine had become of such vital and peculiar interest to the public that it would be reasonable to require security from dealers in that commodity.⁶¹

THE exercise of the police power over matters of health is very different as to constitutionality from the power to fix prices. It is evident that in all of these matters compensation to the owner for the use of property or for the owner's services in connection with it has not been of any importance in the past, nor has it had any influence in establishing such regulation. Police power regulations for these purposes were independent of the compensation for property used. It has been considered that authority to regulate the conduct of a business came from a branch of the police power distinct from the power to fix prices.⁶²

On the other hand, it is urged with considerable logic that the law must adjust itself to changing conditions. Judge Pound of New York defined the police power as "a dynamic agency, vague and undefined in scope, which takes private property or limits its use when great public needs require, uncontrolled by the constitutional requirements of due process. . . ." ⁶³

Justice Roberts took the position in the Nebbia Case that if an industry is subject to any legislative regulation it is subject to legislative regulation touch-

ing prices. He said: ⁶⁴

The thought seems nevertheless to have persisted that there is something peculiarly sacrosanct about the price one may charge for what he makes or sells, and that, however able to regulate other elements of manufacture or trade, with incidental effect upon price, the state is incapable of directly controlling the price itself.

This thought of Justice Roberts' that the right to regulate for any purpose carries with it the right to regulate for all purposes has not been the view of either state courts or the Supreme Court.

Said the supreme judicial court of Massachusetts: ⁶⁵

The circumstance that a business is affected with a public interest does not make legally possible every legislative regulation.

* Instances of the establishment of prices by public authority in connection with any business except that of common carriers and those requiring use of the public ways, although affected with a public interest, are not common.

Referring to the legislative power to regulate prices the Supreme Court said in the theater ticket case that such power is not only a more definite and serious invasion of the rights of property and the freedom of contract but that its exercise cannot be justified by circumstances which might justify legislative regulation of the manner in which a business shall be carried on.⁶⁶

JUSTICE Roberts' conclusion that the legislative right to regulate is all-inclusive has appeared in some of the dissenting opinions and the prevailing opinion in the Insurance Case,⁶⁷ in which the court probably went further to sustain price-fixing legislation than in any other case. It involved the fixing of prices in private contracts of insurance, which are the subject of private negotiation and agreement.

Justice Lamar, however, pointed out in his dissenting opinion in the Insurance Case:

If, as seems to be implied, the fact that a business may be regulated is to be the test of the power to fix rates, it would follow, since all can be regulated, the price charged by all can be regulated.

He also pointed out that if the power to regulate is as extensive as decided in that case it follows that "citizens hold their property and contract rights as a favor from the legislature rather than as a constitutional guaranty." He mentioned a distinction between a public interest justifying regulation for certain purposes and a public use justifying price fixing.⁵⁸ The supreme courts of Kansas⁵⁹ and Maine have recognized the same distinction. Said the Maine court in an eminent domain case:⁶⁰

Property is devoted to a public use, when, and only when . . . all the public has a right to demand and share in. . . . In a broad sense it is the right in the public to an actual use, and not to an incidental benefit.

THE court of appeals of New York upheld the constitutionality of the Milk Control law partially on the theory that the statute was an emergency measure.⁶¹ Apparently the only record of an emergency in the dairy industry in particular was contained in the report of a legislative committee. Chief Justice Pound of the New York court admitted that doubtless the challenged regulation would have been condemned by an earlier generation as interference with the rights of property and contract. Whether the law was upheld by the Supreme Court because of emergency or because the business is affected with a public interest is not entirely clear. Certainly the court placed greater emphasis upon the public interest theory.

In a more recent case Justice Sutherland wrote a concurring opinion in agreement with Justices Van Deventer, McReynolds, and Butler, in which he referred to the Minnesota Moratorium Case,⁶² and said:⁶³

We were unable then, as we are now, to concur in the view that an emergency can ever justify, or, what is really the same thing, can ever furnish an occasion for justifying, a nullification of the constitutional restriction upon state power in respect of the impairment of contractual obligations. . . . We do not possess the benevolent power to compare and contrast infringements of the Constitution and condemn them when they are long-lived or great or unqualified, and

condone them when they are temporary or small or conditioned.

THE language of the majority opinion in the Moratorium Case indicates a present trend of judicial decision toward recognition of an economic theory that private contract rights should yield to an increasing extent to general public welfare. Said Justice Hughes in that case:

Where, in earlier days, it was thought that only the concerns of individuals or of classes were involved, and that those of the state itself were touched only remotely, it has later been found that the fundamental interests of the state are directly affected; and that the question is no longer merely that of one party to a contract as against another, but of the use of reasonable means to safeguard the economic structure upon which the good of all depends.

On the other hand, the supreme court of Florida ruled in March of this year that a statute of the state of Florida which provides for the regulation and control of the barber industry (Laws 1935, Chap. 16799) is unconstitutional in so far as it provides in § 12 for the establishment of minimum prices by the Board of Barber Examiners. The court said:⁶⁴

Neither the Federal nor state governments may impose any arbitrary or unreasonable restraint on the freedom of contract. . . . Included in the right of personal liberty and the right to private property is the right to make contracts for the acquisition of property. Chief among such contracts is that of personal employment by which labor and other services are exchanged for money or other forms of property. If that right be stricken down or arbitrarily interfered with there is a substantial impairment of liberty in the long-established constitutional sense.

ARE the rights in all private property which has not been dedicated to a public use, and not enjoying governmental concession or privilege, to be left dependent upon the will of a legislature with no more restraint than that which applies to the regulation of public utility property? Such may seem to follow from the language of some of the opinions. Justice Story once stated:⁶⁵

That government can scarcely be deemed

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to be free where the rights of property are left solely dependent upon the will of a legislative body without any restraint.

This idea of legislative regulation of prices might come as a distinct shock to the shoe man or the druggist who has no difficulty in understanding regulation of the rates of the industries which the state has named as public utilities. He believes that the government lacks power to tell him what he shall charge for his goods or to whom he shall sell.

CAN the American farm be regulated either as a public utility or because it is affected with a public interest? The answer is probably "No" as to the Federal government by virtue of the decision of the Supreme Court in the Agricultural Adjustment Administration Case. The act involved, which was declared invalid by the Supreme Court, contemplated a new conception of agricultural economy by placing the farm in the category of a public utility. In attempted the regulation and curtailment of crops, provided the farmer wished to enter into a contract therefor, in order to obtain cash benefits. If he did so he agreed to forego his own judgment as to the amount of any commodity which he should raise. The regulation was claimed to be voluntary by its authors but the court held to the contrary, stating:⁶⁶

At best it is a scheme for purchasing with Federal funds submission to Federal regulation of a subject reserved to the states.

If milk, one of the products of the farm is affected with a public interest, why then is not the farm itself so affected? The American farmer may be well on his way toward becoming the operator of a public utility or of property so "affected by a public interest" that all of his products may be regulated as to price by the state. Many other forms of regulation common to public utilities may be forced upon him. Would it be humanly possible to regulate the farms and farmers of the nation as the states regulate utilities? To ask the question is to answer it in the negative, as a matter of practical administra-

tion. The Milk Control Act of New York was claimed to be in the interest of the farmer, who for analogy we may class as the public utility. May we consider this as a precedent to save a recognized public utility in distress if the service is essential to the public? The history of utility regulation has not so indicated.

WHEN the government fixes rates for commodities in a measure it affects the ability of an industry to earn a fair return. The courts have declared many times that a public utility is entitled to earn not less than a fair return on the fair value of its property devoted to the public service. We have seen that under the present law there is no essential difference between a public utility and any other business "affected with a public interest," which means any business the legislature may select by a statute not arbitrary nor capricious. Why then should not the rates prescribed for any business "affected with a public interest" meet the test of constitutionality as do the prescribed rates of a public utility?

The regulation with which we have been most familiar has been for the avowed purpose of rate reductions in the interest of the consumers or customers. If prices of milk and other farm products should at some time be reduced by law what then would be the reaction of the farmers? Would they claim the constitutional right to prices which would produce not less than a fair return on fair value? How that right could be denied is difficult to understand.

Over a period of years it may develop that the producers of milk or any other article of trade might be more favored by adherence to their constitutional rights of freedom of contract with respect to prices, rather than by acquiescence in a government-planned economy and control creating for them a public utility status.

"PLANNED economy" as applied to one industry naturally leads to a "planned economy" for other industries

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until it covers the full scope of our industrial life based upon the underlying theory that all business property is affected with a public interest. From that it would naturally follow that the same economic principles and the same economic controls would apply to each economic field. The same fundamental principles of regulation which today apply to any one recognized public utility apply to all such utilities.

In the event of a planned economy for all industry which undertakes to regulate commodity prices, should not prescribed rates contemplate a fair return to the owners of regulated business of every kind? This is a question which should be considered carefully by those who favor a greatly broadened field of regulation over private property. Ultimately, of course, the question will be one for the courts.

THE Packers and Stockyards Act of 1921 relates in part to rates and charges of the stockyards under the jurisdiction of the Secretary of Agriculture. Attempts have been made by various secretaries of agriculture to regulate such rates, but until recently without signal success, and at very great cost. The stockyards have not been called public utilities but such a label was unnecessary. According to the act the yards are "clothed with a public interest" and thus rate regulation results. Secretary Jardine pointed out in the St. Paul Union Stockyards inquiry that the Stockyards Act does not require that rates shall be established upon the fair value theory and that such a theory is not reasonably applicable to the business. On the other hand the argument is unassailable that if the fair value rule be the law of the land as to gas rates, and it is, then it should be the law of the land as to stockyards, on the theory that from the standpoint of regulation there is no essential difference between a gas company and a stockyard or any other business affected with a public interest. This is not an argument for the fair value rule. The same would be true if the prudent investment theory for

rates were the law of the land, which it is not. The contention that rates of different industries all affected with a public interest should be established upon different theories of value or cost or any other factor is not persuasive. Rather it seems to me that any impracticability of the fair value rule as to certain industries indicates that such industries are not properly subject to price control.

In the latest case involving stockyard rates the Secretary of Agriculture made elaborate findings relative to the value of the stockyard's property, revenues, expenses, and other matters pertinent to the inquiry. He examined the books of the stockyard and conducted hearings as though the stockyards were a public utility. The resulting rates were challenged as confiscatory. The court considered the factors which enter into a rate case of any public utility, namely, value of land, value of structure, going concern value, operating expense, and income, and sustained the prescribed rates.⁶⁷ The majority adhered to the rule of *Smyth v. Ames*⁶⁸ as to the fair value rule in the fixing of a rate base. This clearly indicates the lack of any distinction from the standpoint of rate regulation or price fixing between a public utility and any other business "affected with a public interest."

REGULATION of public utilities today with its resulting rate cases is declared by many to be a failure. This idea is most strongly asserted by those who insist upon the extension of regulation to business in general. They argue that the next step as to utilities in the interest of public welfare is government ownership.

There is a school of thought which for purposes of public ownership consideration draws a sharp distinction between public utilities and other industries. But if as we have seen there is now no recognized distinction between a public utility and any other industry affected with a public interest as far as the right of the state to regulate is concerned, why logically is there any dis-

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tion from the standpoint of complete socialization. If utilities are featured by characteristics which make them properly subject to government ownership it must be because they are affected with a public interest and have the opportunity and ability to dominate the people who use them. By the same reasoning it follows that large and broadly patronized business enterprises of every other kind being affected with a public interest, as any legislature may find at any time, may likewise have opportunity and ability to dominate their patrons and the public generally, and should be publicly owned and operated.

If the government should own and operate the railroads or any other utility it would immediately deal with business concerns which manufacture and sell the necessary supplies to the transportation or utility business. If it is logical for the government to own the railroads or any other utility it is equally logical for it to own mines, forests, steel mills, lumber mills, and all the other enterprises which now sell to the railroads and utilities.

SOME advocates of government ownership assert that it does not follow that the government should own the sources of supply if it owns the utilities.⁶⁹ Assuming that the purpose of government ownership is to reduce the rates charged for utility service, is it not as reasonable to suppose that it might likewise reduce the prices for the supplies and thereby still further assist the customers of the utilities?

Certain advocates of government ownership urge that the operation of utilities is a governmental function and that so long as private companies perform such functions they act in the nature of agents of government. The fundamental distinction between public utility and private business is no longer determined by the use of the streets, nor by the feature of monopoly, nor by the duty to serve all without discrimination. It follows that if the public utilities as we have recognized them in the past are agents of government, so are many oth-

er business enterprises heretofore considered private.

THE notion that public utilities are public enterprises because they perform governmental functions is a "pure modern invention without the slightest support in history, law, or common sense," said Thomas F. Woodlock.⁷⁰ On the other hand, if the will of the people determines the function of government, it follows that governmental functions differ with the difference of fundamental laws of various countries. We have not arrived at the conclusion in this country that the furnishing of utility service is a governmental function.

This is borne out by a recent decision of the Supreme Court⁷¹ in an income tax case, in which the question presented was whether the compensation of the board of trustees of the Boston Elevated Railway Company is constitutionally exempt from the imposition of a Federal income tax. The court said:

The state, with its own conception of public advantage, is undertaking a business enterprise of a sort that is normally within the reach of the Federal taxing power and is distinct from the usual governmental functions.

Mr. Justice Heffernan of the appellate division of the New York Supreme Court, referring to the Panama Railroad Company, which is controlled by the government through stock ownership, said:⁷²

The operation of steamships, railroads, stores, hotels, or dairies has not the slightest relationship to any governmental function. Common sense compels the conclusion that such activities are intrinsically, traditionally, and historically of a commercial and proprietary nature.

THE Rt. Rev. John A. Ryan, D. D., although asserting the failure of state regulation of public utilities, nevertheless advocates some degree of governmental regulation over "the vast majority of industries" to take the form of a revised and amplified National Industrial Recovery Act.⁷³ Passing over the question of the success or failure of state regulation of utilities as outside the scope and purpose of this paper,

it is pertinent here to say that if regulation of utilities has failed the regulation of industry in general must fail for the same reasons and in a far greater degree.

Moreover, any control and supervision of industry by the government similar to that provided for in the National Industrial Recovery Act, declared void by the Supreme Court,⁷⁴ and which in the opinion of some people would have brought this country near to fascism, would seem doomed at its inception.

IN Russia there appears to be no distinction between business affected with a public interest and other business ordinarily private, inasmuch as the Soviet Government owns and operates all business. The rates for the services of public utilities in Russia are very largely matters of the ability of individuals to pay. The public service commission of the state of Wisconsin seemed to favor this idea not long ago when it announced its value of service theory, its thought being that a lessened ability to pay lessens the value of service.⁷⁵

The Soviet patron or consumer living in an assigned apartment finds that the so-called utility services come to him with his housing. The Soviet Government looks upon the whole question of a return on property from the standpoint of averages. Apparently it is impossible to determine accurately which of the businesses, including the utilities of the country, are paying their way and which are being carried along by other enterprises. Our American system, created, fostered, and strengthened by individual initiative and the hope of reward has called upon every business to stand upon its own feet and under its own management and control. Are we likely to adopt anything similar to the Russian communistic system of governmental planned economy or even the fascist system of regulation of private property?

MANY eminent business leaders sincerely feel that it is possible to work out a system for the regulation of industry by the industries themselves

which would be far more efficient than any system of governmental regulation. They believe that they are as moral and as efficient as are government officials and that their knowledge and experience in their individual lines of enterprise particularly fit them for this type of internal regulation. Naturally this idea is strongly opposed by those who advocate governmental regulation of all business, and to a certain extent by a third group who advocate that business should be allowed to go its own way without either internal or external regulation, guided only by the law of competition.

Governmental regulation of rates or prices within any great industry tends to eliminate the factor of competition. The competitive system has worked well in the United States. There are many who believe we should guard the best features of it. It has been said:⁷⁶

Barring competition is only a way of bringing in price fixing, and price fixing is not only the refuge of the incapable man but also a stone wall across the path of progress.

RATES of public companies have been regulated by statute, both state and Federal, for many years, and properly so. The challenge of private ownership in utilities against public regulation today deals solely with the question of the reasonableness of the regulation and not with the question of the right of government to regulate. In such cases the court seeks to ascertain whether such regulation has been arbitrary. A finding that it has been arbitrary is the ground for holding that the regulation is violative of due process under the Fifth or Fourteenth Amendment, as the case may be. That is exactly the test which the Supreme Court has said shall be applied to a governmental act attempting to regulate rates and prices of any other private business which a law-making body, state or Federal, may have concluded needs regulation in the interest of public welfare.

Assuming without admitting that regulation of prices of industry generally might meet the test of constitutionality under statutes themselves not arbitrary

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bitrary nor capricious, the regulatory orders of the many resulting commissions and bureaus would still be called upon to meet that test. The result would be enlarged government payrolls to the extent of numberless administrators, lawyers, accountants, engineers, specialists, functionaries, and experts in every line of business thus sought to be regulated.

IF such unprecedented and far-reaching increase of regulatory power were given to a large number of newly created tribunals, arbitrary action on their part should not surprise us. Its avoidance might depend on the degree to which such commissions would heed the warning of the Supreme Court given in March of this year, that "Arbitrary power and the rule of the Constitution cannot both exist. They are antagonistic and incompatible forces; and one or the other must of necessity perish whenever they are brought into conflict." ⁷⁷

Findings of an administrative tribunal are not conclusive in cases involving the regulation of rates. Chief Justice Hughes on April 27th of this year warned regulatory agencies that their acts become subject to review by the courts both as to facts and conclusions of law when the issues of constitutional rights of liberty and property are involved. ⁷⁸

Said the Chief Justice:

Legislative agencies, with varying qualifications, work in a field peculiarly exposed to political demands. Some may be expert and impartial, others subservient. It is not difficult for them to observe the requirements of law in giving a hearing and receiving evidence. But to say that their findings of fact may be made conclusive where constitutional rights of liberty and property are involved . . . is to place those rights at the mercy of administrative officials. . . . That prospect, with our multiplication of administrative agencies, is not one to be lightly regarded.

WITHOUT stating agreement or disagreement in principle perhaps many of us have admiration for the dissenting opinion of Mr. Justice Holmes in *Tyson v. Banton*. ⁷⁹ It is

scholarly, brief, and to the point. In the matter of power of legislatures to act in the interest of public welfare, Justice Holmes boldly referred to such terms as "the police power" and "dedicated to a public use" as convenient expressions of needless apology for legislative power. He frankly stated that he did not believe in such apologies and that "a state legislature can do whatever it sees fit to do unless it is restrained by some expressed prohibition in the Constitution of the United States or of the state." Concerning this much discussed phrase "clothed with a public interest" Justice Holmes characterized it as a "fiction intended to beautify what is disagreeable to the sufferers." His thought was that a change in public opinion justifies legislative acts in conformity therewith and that the law should keep in step with the wishes of the people.

ATTEMPTS at governmental regulation, both state and Federal, over private property and private business enterprises of every kind are increasing to such an extent that if continued may alter our whole business structure. The change which is rapidly going on is very important whether we conclude that it is detrimental and destructive or beneficial and helpful. The important point for consideration by the citizens of the country is that the change is radical and demands an immediate determination whether or not we shall attempt to resist it or shall go along with it and endeavor to like it. If we are prepared and desire to give up all individualism and initiative in business, which has given the United States a dominant position in industry, then we are on the right track toward that end.

In this period of a rapidly changing conception of public welfare, such a radical and fundamental change may be the desire of the people. I do not know and it is not the function of this paper to prophesy. We are concerned here more particularly with the legal aspects of some of these changes under the law as it stands today. As Mr. Justice Holmes said: ⁸⁰

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The truth seems to me to be that, subject to compensation when compensation is due, the legislature may forbid or restrict any business when it has a sufficient force of public opinion behind it.

If American business still treasures a

reasonable degree of freedom of management which it formerly had considered safe under constitutional guaranty, its determination must be to fight to retain a public opinion favorable to that end, and the time is now.



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The Administration of the Public Utility Holding Company Act of 1935

By ROBERT E. HEALY*

IT is the purpose of this paper to give as clear a picture as possible of the actual problems with which the Securities and Exchange Commission is confronted in its task of administering the Public Utility Holding Company Act of 1935 and the manner in which it is dealing with these problems. With the merits of the legislation I do not propose to deal, nor can I enter into a discussion of the constitutionality of the act, which is now being litigated.

The Public Utility Holding Company Act of 1935 became law on August 26th of that year. It constitutes Title I of the Public Utility Act of 1935. Title II consists of amendments of the

Federal Water Power Act, designed primarily to expand the jurisdiction of the Federal Power Commission with respect to electric utilities selling current at wholesale in interstate commerce. My discussion will be confined to Title I, which is administered by the Securities and Exchange Commission. The statistics which I will give you are as of approximately August 15th.

In general, the Holding Company Act provides for registration with the Securities and Exchange Commission of gas and electric utility holding companies. It has no reference to telephone, railroad, or industrial holding companies as such. After a holding company is registered, it is subject to a number of statutory provisions and

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also to general rules and regulations or specific orders of the commission with respect to a variety of aspects of its business which I will discuss in some detail as I describe the commission's administrative work.

The act called for registration of holding companies not later than December 1, 1935. The commission is, however, directed to exempt holding companies of certain specified types from the provisions of the act. The first task with which we were faced last autumn was, therefore, setting up machinery for registration of holding companies and for the exemption of those which were entitled to it.

THE statute authorizes a provisional form of registration to be effected merely by filing with the commission a notification of registration. This need not contain the more detailed information which may be required later. The form which we adopted permitted companies to register by filing a simple statement including little more than a corporate chart, a schedule of securities outstanding, the names of officers and directors, and maps showing the territories served.

The procedure for obtaining exemptions of holding companies was made as simple as possible. The commission is directed to exempt certain companies which are "predominantly" intrastate not receiving a "material part" of their income from extrastate subsidiaries; which are "predominantly" operating public utility companies whose operations as such do not extend beyond the state of organization and contiguous states; which are "only incidentally holding companies" being "primarily engaged or interested" in other business; which are only "temporarily" holding companies; or which have only foreign subsidiaries.

The act provides that such exemptions shall be granted either by rules or regulations upon the commission's own motion, or by order upon application from the company concerned. We have exempted by rule intrastate hold-

ing companies and those which qualify for exemption by reason of being predominantly operating companies. In the other cases, however, except for a temporary exemption granted at the start to all such companies coming within the statutory language, it has seemed preferable to proceed by specific orders so that each company may know exactly where it stands. Furthermore, an intrastate holding company or an operating company, which may be in doubt as to whether it comes within the appropriate exemptive rule, may obtain a determination of its status by applying for a specific exemption by order.

THE information required in an application for exemption of a holding company is extremely elastic. We adopted rules specifying the information which we thought relevant in the ordinary situation, but we left it up to the applicant to omit any information which it might deem irrelevant in a particular case, reserving the right on the part of the commission to call for any further information that might be necessary.

Several interesting problems are presented by these applications for exemption, especially in cases where a company's activities as a public utility holding company are of substantial proportions when considered separately, but small in comparison to its industrial activities. The act provides that the commission shall grant exemptions to companies coming within the statutory provisions "unless and except in so far as it finds the exemption detrimental to the public interest or the interest of investors and consumers." In the applications so far granted the commission has not found it necessary to invoke this power to limit the exemption otherwise than with respect to procedural matters such as requiring periodic reports from an applicant which has been exempted on the ground that it was only temporarily a holding company. It has not yet been determined whether the commission will impose more sub-

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stantial restrictions with respect to some of the applications still pending.

In addition to exemptions of holding companies as such, the commission has power to exclude from that category companies which, although coming within the statutory definition of a holding company, do not in fact exert the type of control which the statute contemplates.

THE statute defines a holding company as any company which, directly or indirectly, owns, controls, or holds with power to vote 10 per cent or more of the outstanding voting securities of a public utility company (that is, of an electric company or a company distributing gas at retail). It is provided, however, that the commission may declare a company not to be a holding company if in fact it does not control any public utility although it holds a 10 per cent interest; and, conversely, the commission is empowered to determine a company to be a holding company if it actually exercises control with a holding of less than 10 per cent of the voting power. The determination of what is a subsidiary company represents a parallel problem. The act defines a subsidiary as a company of which 10 per cent or more of the outstanding voting securities are owned, controlled, or held with power to vote by the holding company in question, and provides, on the one hand, for exclusion from the category of subsidiary of any company which the commission shall find not to be controlled in spite of a 10 per cent interest and, on the other hand, for the inclusion of companies which are actually controlled by a smaller holding.

Another type of exemptive power granted the commission is that of excluding companies from the category of gas or electric utilities if they are primarily engaged in some other business and sell merely a limited amount of electric energy or gas. If such a company is not an electric or gas utility, its parent company will not be a holding company for purposes of the

act. Many industrial companies have subsidiaries which own their generating stations. Likewise it often happens that a company in a gas pipe-line system will sell a small amount of gas at retail. The commission has obviated the necessity for passing on a number of applications in such cases by rules declaring certain companies not to be electric or gas utilities if they sell less than \$100,000 per year of electric energy or gas and are primarily engaged in some other business.

IN all, 375 applications were received for exemption of holding companies and for orders declaring companies not to be holding companies or subsidiaries of holding companies or declaring companies not to be electric or gas utilities. The act provides that applications for such orders shall, if filed in good faith, be automatically effective until the commission has acted upon them. This provision enabled the commission to take the time necessary to examine applications without subjecting the applicants in the meanwhile to regulations from which they might be entitled to immunity. Some 65 of these have been granted. One hundred twenty-four have been withdrawn, in most cases because the applicant was satisfied that a rule of the commission sufficiently clarified its status or that the application was filed under a misapprehension as to the meaning of the act. The remainder are still pending.

Sixty-five holding companies are now registered, including a number of subholding companies of registered systems. Most of the major systems have declined to register and have brought suits to test the constitutionality of the act. The government is also seeking an injunction against one company in proceedings which it hopes to make a test case to determine the constitutional issue. It has been announced that, pending the determination of constitutionality, the government will not invoke criminal sanctions against those who have failed to register. There are four or five systems

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of substantial importance which have come under our jurisdiction. We have, therefore, obtained a fair cross-section of experience in the type of problems attendant upon administration of the act. The coöperation which we have received from the holding companies which have registered has been an extremely important factor in enabling us to approach these problems with some understanding, and I think I may say with reasonable success. I do not wish to imply, however, that failure to register on the part of most members of the industry has meant complete absence of coöperation. From the start it has been our policy to seek the advice and assistance of representatives of the industry, regardless of whether their companies were registered or not. A number of our rules and regulations have been submitted for comment to a committee composed of executives of the major companies, and their coöperation has been extremely helpful. Furthermore, some of the unregistered holding company systems have made an effort to adjust their practices in many respects to comply with our regulations in order to give them a fair trial.

At this point I think it may be helpful to describe to you the organization of that part of the commission's staff which is charged with the administration of the Holding Company Act. Those who give virtually full time to matters arising under the act as distinct from the Securities Act of 1933 and the Securities Exchange Act of 1934 include some eighty-nine members of the staff. These include some twenty-two on the clerical staff, recruited from the ranks of the Civil Service, and about sixty-seven financial analysts, accountants, engineers, and lawyers, chosen on a basis of experience and qualifications as experts.

Before the act became law, the commission had begun to make plans for handling the task of administration. The then existing personnel of the commission was carefully examined for in-

dividuals whose experience would qualify them for the new duties which the commission was to assume. A skeleton staff was organized from this group and promptly after passage of the act they were transferred from other parts of the commission to what has since become the public utilities division. Most of the personnel were, however, selected from outside sources.

The engineers, financial analysts, and accountants comprising our staff of experts have had practical experience in connection with the organization, operation, construction, financing, and accounting of public utility enterprises. These include men who are acquainted with the operating conditions in every part of the country. Several of them have also had experience in foreign countries. The senior members of the staff have all had positions of responsibility and many of them have had complete charge of utility operations or of the particular side of the business in which they specialize.

THE director of the public utilities division, after an extensive experience with utility companies, served for a number of years as assistant to the treasurer in charge of the utilities investments of one of the largest life insurance companies of the United States, with investments in utilities securities running into hundreds of millions of dollars. During this time he had occasion to inspect the properties and study the operations of the larger utility operating companies of the country. Our financial men include one who was for many years financial vice president and treasurer of a large holding company system, and another who has had wide experience as an officer of a holding company system and for several years represented a group of banking houses in connection with the reorganization and simplification of corporate structures of one of the largest holding company systems. The chief engineer has had extensive experience as an operating and designing engineer for large utility companies,

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as a consulting engineer, and as chief engineer of one of the country's most active public service commissions. These are but a few examples.

An assistant general counsel devotes his entire time to public utilities together with a number of other lawyers, in addition to those engaged in working on the litigation involving the constitutionality of the act to which I have already referred.

The finance section of the public utilities division has been organized into eight groups, to each of which are assigned a number of holding company systems. Each group includes a senior analyst, an accountant, a number of analysts, and an attorney. It is the function of the groups to familiarize themselves as thoroughly as possible with the financial and corporate structure, operations, and many other aspects of the holding company systems assigned to them. These include holding company systems which have not registered, as well as those which have already come under the jurisdiction of the commission. The advantage of this method of organization is that our staff is constantly becoming better equipped to handle new problems with dispatch and without having to repeat in each case the process of acquiring the necessary factual background.

THE engineering section has been organized under the direction of a supervising engineer. To this section are assigned special studies of an engineering character. The members of this specialized staff of engineers are available for consultation with all members of the division.

Perhaps the best way to give you an idea of the actual process of administration of the act is to describe our work in handling some of the types of cases which have come before the commission requiring specific determination. One of the most important of these is the matter of security issues by registered holding companies and their subsidiaries.

It is unlawful for a registered hold-

ing company or subsidiary thereof to issue or sell any security unless a declaration with respect to the security has been filed with the commission and has become effective. The act provides that the commission shall not permit a declaration to become effective unless the security meets certain specified standards. In this respect there is an important distinction between this act and the other acts which the Securities and Exchange Commission administers. In the case of the Securities Act of 1933 and the Securities Exchange Act of 1934, the commission's essential duty is to see to it that adequate and truthful disclosure is made to investors with respect to the securities offered to them. The commission is not authorized under those acts to forbid the sale of securities no matter how unsound, as long as the truth is adequately revealed. In the case of the Holding Company Act, on the other hand, the commission although it does not pass on the merits of securities as an investment, must require that securities comply with specified conditions.

THE financing of holding companies in the past has involved the creation of such complicated corporate structures and of securities carrying such intricate rights and obligations that it has become increasingly difficult for the ordinary investor to be able to pass any intelligent judgment on their investment value. The hearings which were held prior to the passage of the act indicate that it was felt that the commission, although it could not, of course, pass on the merits of securities as investments, should be charged with the duty of prohibiting the sale of certain types of securities which were almost bound to be misleading to the ordinary investor. Let us take as an example preferred stock or unsecured debentures of a holding company. The investor had been educated to regard a debenture or a preferred stock as a security having priority as to earnings. In the typical situation where the operating companies have bonds and pre-

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ferred stock outstanding in the hands of the public, and the major part of the holding company's income is or was derived from dividends on common stock of the operating companies, little is available for payments on the debentures and preferred stock of the holding company unless a dividend is declared on the common stock of the operating companies. Thus a debenture holder of such a holding company actually is in a position junior to that of a preferred stockholder of an operating company, and a preferred stockholder of the holding company is in an even more inferior position. The act prohibits the commission from permitting the issuance of preferred stock or unsecured obligations by holding companies except in the case of certain refinancing, refunding, or reorganization operations or in cases where the issuance is necessary for urgent corporate purposes and a more rigid standard would impose an unreasonable financial burden upon the company.

OTHER requirements are that the fees, commissions, and other remuneration paid in connection with the issue or sale or distribution must be reasonable; that the security be reasonably adapted to the security structure of the company and the system and to the earning power of the issuer; and that the financing involved be necessary or appropriate to the economical and efficient operation of a business in which the company is lawfully engaged or has an interest. In general, the commission must not permit a declaration to become effective if the terms and conditions of the issue or sale are detrimental to the public interest or the interest of investors or consumers.

A simple form has been prescribed for declarations calling for information showing compliance with the statutory standards. When a declaration is filed with the commission it is examined by that group in the public utilities division which has charge of the holding company system to which the company belongs, to determine whether the con-

ditions I have referred to are satisfied. This question must be passed upon by financial analysts and accountants and also by the lawyer assigned to the group. Meanwhile, a date for a hearing will have been set at which any interested person may appear.

If any further information is required in order to enable the commission to pass on the questions presented to it, the company is requested to file amendments to the declaration or to furnish supplementary information informally. If there is any serious doubt in the minds of the commission's staff as to whether the issue is of the character which the commission should permit, conferences between representatives of the company and members of the commission's staff may result in revision removing such doubts before the matter goes to a hearing. Hearings are usually before a trial examiner, and the attorney assigned to the group ordinarily acts as attorney for the commission at the hearing.

AFTER the hearing, and after the filing of the trial examiner's report, if any, the group assigned to the case prepares a legal and financial report which is based on the material contained in the declaration and the evidence adduced at the hearing. This report is for the convenience of the commission and is submitted to it along with the record in the case. The commission then makes its findings of fact based on the record in the case and issues an appropriate order disposing of the matter.

The commission has passed upon approximately eight declarations with respect to security issues, involving some \$76,000,000 of securities. In most cases declarations were permitted to become effective without calling for any changes in the proposed financing. This has not always been the case, however. In one instance involving an increase in a company's debt where the commission felt that the ratio of debt to fixed property was rather high, the company was required to add to the

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trust indentures securing its obligations certain covenants which gave added protection to the securities to be issued.

There are certain security issues which are exempt from the requirement of filing a declaration. Some of these, such as specified types of short-term paper, are exempted automatically by the statute. In other cases, exemption is to be obtained by rule or regulation or by order of the commission. So far, exemptions of this kind have all been by order. These include issues by operating public utility companies which have been expressly approved by a state commission. Owing to the variety of state laws and of practices of state commissions with respect to approving security issues, there are sometimes difficult questions of interpretation as to whether the action of a particular state commission constitutes approval of the issuance within the meaning of the Federal statute. The commission has granted seventeen applications for such exemptions.

AQUISITIONS by registered holding companies or their subsidiaries of securities, utility assets, or any other interest in any other business also come under the scrutiny of the commission. Since the act requires holding company systems to be reduced to integrated systems within a specified period, as I shall explain later, it was naturally thought desirable that the commission have power to control the growth of systems in the meanwhile. Also the commission can prevent the pyramiding of control through many layers or holding company systems, which was one of the evils principally complained of with respect to holding companies.

An application for approval of an acquisition is filed with the commission on a prescribed form and the procedure in passing on it is closely parallel to that which I have outlined in connection with security issues. Among the standards by which the commission must be guided in approving acquisitions, is a requirement that no acquisi-

tion shall be approved unless the commission finds that it will serve the public interest by tending towards the economical and efficient development of an integrated public utility system. The commission must also deny an application if it will tend toward interlocking relations or concentrated control of public utility companies in a manner detrimental to the public interest or the interest of investors or consumers; if the consideration to be paid is not reasonable; or if the acquisition will unduly complicate the capital structure of the system; or if it will otherwise be detrimental to the public interest or the interest of investors or consumers or the proper functioning of the system.

IN determining whether these conditions are satisfied, an examination is made not only by financial experts and lawyers as in the case of security issues, but also by members of the commission's engineering staff. Nineteen applications with respect to such acquisitions have been granted. In all these cases the commission was able to approve the application without substantial modification.

The exemptive power of the commission with respect to acquisitions is somewhat different from that in the case of security issues. Certain acquisitions expressly approved by state commissions are automatically exempted by the statute, as are also acquisitions of government or municipal bonds. In addition, the commission is given a general power to exempt by rules and regulations acquisitions of securities for investment of current funds or acquisitions made in the ordinary course of business of the acquiring company. Acting under this authority, the commission has adopted rules providing a number of exemptions. These include purchases of certain readily marketable securities generally considered appropriate for investment of current funds and also certain short-term paper, acquisitions which may be necessary to comply with

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conversion rights or sinking-fund obligations and similar obligations, acquisitions from wholly owned subsidiaries, the receipt of stock dividends, the buying of limited amounts of securities issued by the acquiring company or its subsidiaries, and a number of other transactions where the commission felt that the public interest would not require the imposition of the standards specified in the act. Thus the commission is in a position to examine very carefully acquisitions which may involve the growth or complication of a holding company system, but most acquisitions of a routine nature have been exempted.

SUPERVISION over the reorganization of holding companies presents one of the most important duties of the commission. There has been so much discussion of the reorganization section of the act, which has been termed a "death sentence," that I think it may be well for me to take time to remind you of its provisions. Although, as regards its most important aspects, this section has not yet become effective, the policy expressed by it is one which the commission must constantly have in mind in passing on any transactions involving further growth of the existing systems.

The commission is directed, as soon as practicable after January 1, 1938, to require every registered holding company to take such action as the commission shall find necessary to limit the operations of its system to those of a single integrated public utility system and to such other businesses as are reasonably incidental or economically necessary or appropriate to the operation thereof. The commission is, however, authorized to permit one holding company to control more than one integrated system if it shall find that each such additional system cannot be operated independently without the loss of substantial economies, that all of such additional systems are located in a single state or in adjoining territory, and that the continued combination of such

systems under the control of the one holding company is not so large as to impair the advantages of localized management, efficient operation, or the effectiveness of regulation.

In addition to confining the operations of a utility system in a geographical sense, the commission must also, as soon as practicable after January 1, 1938, cause the companies under its jurisdiction to bring about a simplification of holding company structures so as to eliminate unnecessary complications or unfair distributions of voting power. This must include elimination of holding companies beyond the second degree.

Companies desiring to effect voluntary reorganizations, instead of waiting for the commission to bring action, may invoke the aid of the commission before 1938 in carrying out reorganizations designed to satisfy the statutory requirements.

ALTHOUGH mandatory integration and simplification of systems do not come until 1938, the utilities division is preparing itself for the tremendous task which will face the commission at that time (and may well face it before then in cases involving voluntary plans) by studying some of our registered systems with a view to determining how the integration which the statute calls for might best be achieved. This, of course, requires very careful study of many engineering problems and it is a work which will of necessity be slow.

In addition to reorganizations designed to bring about the integration and simplification required by the statute, the commission also has jurisdiction generally over reorganizations of registered holding companies and their subsidiaries. No reorganization plan for such a company in a Federal court in which a receiver or trustee has been appointed can become effective unless approved by the commission. It is also provided that no one may solicit proxies or assents with respect to reorganization plans for such companies

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unless the plan has been submitted to the commission and the solicitation is accompanied or preceded by a copy of the report on the plan which shall be made by the commission. The commission has taken the view that these provisions do not apply to cases where the receiver or trustee was appointed prior to December 1, 1935, the date for registration, or where the solicitation in question was commenced in good faith prior to that date. We have not as yet, therefore, had occasion to pass upon any reorganization plans as such.

Orders of the commission compelling the simplification of corporate structures or the integration of systems, or approving or disapproving plans of reorganization, are enforceable only in courts of equity. This gives the company full opportunity to protest the action of the commission without incurring any risk of penal sanctions. In general, it should be noted that the act provides for court review of any order of the commission at the instance of any person aggrieved thereby.

ANOTHER important field of holding company activities which it is the duty of the commission to regulate, is that of service, sales, and construction contracts. One of the principal grounds of criticism of holding companies has, of course, been the fees and other charges which holding companies or their wholly owned subsidiary service companies have exacted from the operating companies for management and other services, for construction work, or for goods sold. In a number of cases, economies have resulted from unified management, but the operating companies have not always benefited. Furthermore, it was felt that it was unfair to consumers to have included in the expenses of operation, which were a factor in determining rates, payments which were actually made to the interests in control of the operating company. The act outlaws, subject to a limited exemptive power in the commission, the

performance of service, sales, or construction contracts by registered holding companies for their public utility subsidiaries. Such transactions, when performed by subsidiary companies for associate companies in the same system must be in accordance with rules, regulations, or orders of the commission designed to insure their efficient and economical performance at cost fairly and equitably allocated. Provision is made for the organization of mutual service companies which must be approved by the commission.

The commission's staff devoted many months of intensive study to the preparation of rules on this subject which would set up effective machinery for bringing about the objectives of the act. These rules, as has been the case with a number of other rules of the commission, were submitted in tentative form to representatives of the industry, and a careful effort was made to make them essentially workable. Many details, such as the best procedure for fairly allocating cost, were of necessity left open to further elaboration in the light of administrative experience.

THE commission set August 1st as the date by which mutual service companies must be approved, and subsidiary service companies not owned on a mutual basis by the companies served must obtain a finding by the commission that their organization is such as reasonably to assure the achievement of the statutory standards. Ten of these applications or declarations have been favorably acted upon. Temporary extensions of time have been given in the case of other holding company systems in order to permit the necessary corporate readjustments.

In the case of some other activities of holding company systems, the statute, instead of imposing rigid standards which might involve considerable difficulty as applied to a comparatively novel field of regulation, authorizes the commission, by such rules, regulations, or orders as it deems necessary,

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to eliminate certain specific abuses which have been deemed to characterize the activities of holding companies in the past. In most such cases where its jurisdiction is essentially discretionary, the commission has not yet taken action. Some such regulations have, however, already been imposed. For example, in connection with our rules exempting certain acquisitions of securities issued by other companies from the requirement of commission approval, we found it expedient to impose some corresponding limitations on the buying in of securities issued by the acquiring company. The commission also has rule-making powers which have not yet been invoked with respect to such matters as intercorporate loans, the payment of dividends, the solicitation of proxies, and intercorporate transactions in general.

ONE important provision of the act, not effective until August 26th (a year after the date of enactment), is that which prohibits members of holding company systems to have officers or directors who are also officers or directors of banks or other financial institutions. The commission is given authority to make exceptions to this prohibition by rules and regulations. Rules granting certain exemptions were adopted after very careful preparation following extended conferences and correspondence both with members of the industry and with representatives of the many financial interests affected.

Our aim in drafting these rules followed closely the general policy of the commission in administering the act: on the one hand, to give full effect to the congressional intent of preventing the repetition of the abuses which led to the passage of this legislation, and, on the other hand, to make the administration of the act as workable as possible without imposing restrictions of a kind which bear no relation to the purposes to be achieved. Although it must be recognized that there are certain limits to the discretionary power which may be delegated to an adminis-

trative body from the point of view of both policy and law, I think that all who have had experience with the work of the commission in administering the act, as well as its administration of the Securities Act of 1933 and the Securities Exchange Act of 1934, have realized that, unless reasonably flexible powers were delegated to the commission, regulation would be so rigid as to lead to frustration.

THE principal purpose of the prohibition of interlocking control with financial institutions was clearly to prevent them from dominating holding company systems. Exemptions were granted in certain cases where the likelihood of such control appeared remote or where it seemed that a financial institution had an interest in a company which it might legitimately desire to protect by having representation in the management. For instance (subject to certain limitations), operating companies may have local bankers as officers or directors; savings banks are excluded from the scope of the prohibition; investment bankers are permitted to be on utility boards provided that their firms do not do any financing for the companies in question; and a bank to which a company is in default on a loan of substantial size, or which has an interest of a specified amount in the securities of a company acquired in liquidation of a debt or held while the company is in financial difficulties, may be represented in the management, provided such representation would not be in conflict with the bank's obligations as a corporate trustee. These are only a few of the exemptions granted.

One of the most difficult and at the same time one of the most important tasks of the commission, is with respect to accounting. The accounting problems encountered in establishing classifications for independent operating companies are intricate enough; they become even more complex when intercorporate transactions are involved, and the accounting of holding companies presents many additional

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problems. The commission is given broad power by rules, regulations, and orders to regulate the accounting of registered holding companies and their subsidiaries.

We have adopted classifications of accounts for holding companies and for service companies which are members of holding company systems. While the classification of accounts for holding companies has been adopted, it has not yet been made public because of delay in obtaining printed copies. In both cases the commission has required uniformity of accounts with respect to matters which it deems important in connection with the administration of the act, but has left to the judgment of the companies or of the state commissions minor details as to subdivision of accounts.

As far as the accounting of operating companies is concerned, the commission has definitely adopted a policy of not interfering with the regulations of state commissions. Only if it should develop that accounting practices sanctioned by state commissions intimately affect the problems of holding company finance and are clearly inconsistent with important policies which it is the commission's duty to carry out, would there be any exception to this policy. In general, the aim is to make regulation of accounting as simple as possible.

There are a few general policies of the commission in its administration of the act which I wish to emphasize in closing. In the first place, the commission does not regard its task in administering the act as that of driving an entering wedge for public ownership of utilities. In the second place, we have no concern with the matter of rates as such, although it is our hope that the administration of the act will aid the state commissions in obtaining such information as they may need as a basis for intelligent regulation of rates. We hope in every way to strengthen the hands of the state commissions rather than to deprive them of their powers.

Federal regulation of public utility activities must still be regarded as in the experimental stage. Fortunately, the act provides extensive flexibility of procedure so that the commission may gradually develop substance of regulation in the light of actual experience. The constitutionality of the act has still, of course, to be determined, but I think most people agree that the problem is one with which the Federal government will have to deal in one way or another. Meanwhile, both the industry and the commission are acquiring useful experience in many aspects of our fundamental problem, which is defined by the act as the protection of the public interest and the interest of investors and consumers.

The Federal Power Act and Kindred Legislation with Reference to State Regulation

By CLYDE L. SEAVEY*

IN discussing the Federal Power Act, Title II of the Public Utility Act of 1935, with special reference to its effect upon state regulation, we may profitably approach the subject from the standpoint of kindred legislation

which has been passed in the last two sessions of Congress, not only because much of this legislation ties together, but also that we may get a broad background and picture of what has been happening in the Federal regulatory field.

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The Johnson Bill, amending § 24 of

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the Judicial Code, became a law on May 14, 1934. This enactment divested the lower Federal courts of jurisdiction over the action of state regulatory bodies in the fixing of rates, where proper notice and hearing has been afforded and where state law gives adequate relief in the state courts. This means there has been removed the threat and practice of original interpretation by Federal courts of state law and legislative acts of state commissions; of long years of litigation and consequent suspense of the regulatory processes; of *de novo* proceedings in which the decision of the state commission may be annulled upon a record differing from that which was presented to it and upon which its judgment was based; and of the usurpation and control by the Federal courts through judicial proceeding of the legislative processes in the determination of local rates.

The Securities Act of 1933, and the Securities Exchange Act of 1934, consist largely of salutary legislation. Back of this legislation stands the tremendous work of the Federal Trade Commission, accomplished during the past eight or nine years, under the direction and authorization of Congress, in exploring corporate practices of holding companies in electric and gas public utilities.

THE two Securities Acts are what we would call in the states, "Blue Sky Laws." Their first purpose is to expose to view all the information necessary for the investing public to get a true picture of the nature and underlying soundness of the securities. The second purpose is to regulate securities exchanges and over-the-counter markets operating through the mails and in interstate and foreign commerce, and to prevent unfair and inequitable practices in the handling of securities transactions. These two pieces of legislation are of direct value to the states in bringing to public attention corporate relations and conditions sometimes beyond the legal power of the state to

inquire into, and in preventing undue manipulations of utilities stocks resulting in the building up of speculative values which in the light of the equity behind such stock, are impossible of fruition. One of the difficulties of state regulation is the existence of this fictitious value. As a matter of fact equitably there does not exist any speculative value behind the securities of a monopolistic public utility. Because of the obligations and limitations on both the utility ownership and the public served, there can exist actually only the less alluring but thoroughly safe fluctuations of stable investments.

Title I of the Public Utility Act of 1935, extends the power of the Securities and Exchange Commission to the control and regulation of holding company relations in cases of gas and electric companies, as to the purchase of securities and assets; as to their service, sales, construction, and other contractual relations, and as to their practices in the general control over subsidiary companies. The law prevents the evasion of state statutes by interstate means, notably as to the intermingling of electric and gas property control; it provides for the simplification of the corporate structures or the elimination of the holding control where such action is in the public interest; and it controls intercompany loans, dividends, and other transactions. While all of these provisions are directly or indirectly of much value, the control of fees and charges collected from subsidiary companies and the elimination of profit from such transactions, represent, perhaps, the outstanding benefits which will flow to state regulation from this enactment.

TITLE II of the Public Utility Act of 1935 extends the jurisdiction of the Federal Power Commission, by placing under it the regulation of electric utility companies engaged in interstate commerce. The purpose is to fill the vacuum that existed in the regulation of utility service through the absence of Federal regulation in a field

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beyond the powers of the states, and to have such legislation supplement and strengthen state regulation. This includes the control of the transmission of power to foreign countries and the control of the interstate field as to interconnection and coördination of facilities; consolidation and disposition of facilities; purchase or acquisition of securities of one utility by another; issuance of securities and assumption of liabilities where not regulated by a state; determination of just and reasonable wholesale rates and charges; the furnishing of adequate service; and the investigation into and compilation and publication of all facts regarding the generation, transmission, distribution, and sale of all electric energy, however produced and used in the United States and its possessions.

Whatever diversity of opinion may exist as to the Tennessee Valley Authority Act of 1933, there can be no doubt that the use of the so-called "yardstick" has had an immediate effect upon the reduction and stabilization of rates for electricity in the Tennessee valley states. This effect has not been confined to those states alone.

The Electric Rate Survey carried out under Senate Joint Resolution No. 74, issued April 14, 1934, by the Federal Power Commission, covering the entire service of electricity in the United States, has established fundamental data never before collated and from which criteria and comparisons are available for general and local use.

The effect of these last two pieces of legislation upon regulation is not capable of exact measurement but there can be no question that they have made it easier for various state commissions in the establishment of proper rates, and that they had a substantial effect in the reduction of charges for the use of electricity which has taken effect in the last two years, amounting to more than \$100,000,000.

EXECUTIVE Order No. 6251, issued August 19, 1933, authorized and directed the Federal Power Commission

to make a survey of the water-power resources of the nation; of the relation of water power to other industries, and to interstate and foreign commerce; and of the transmission of electrical energy and its distribution to consumers. The survey also was authorized under the provisions of the Federal Water Power Act of 1920, which had lain dormant for thirteen years. It was the first survey of its kind ever made in the United States. There has been general approval of this effort, and while it was primarily for the formation of a program of public works, its permanent value exists as a guide to future development and as an aid in obtaining the fullest degree of electric service, both interstate and intrastate.

The Communications Act of 1934 consolidated the authority of the several agencies theretofore partially occupying the interstate field and broadened the powers of the Federal agency to a comprehensive regulation of the telegraph, telephone, and radio. The telephone is here the matter of most importance to state commissions. Much information necessary to the regulation of telephone rates has not been available. The data now being collected by the Federal Communications Commission, when completed and coördinated, will be of great value in simplifying and making effective regulation by the state bodies of local telephone rates and service.

The Motor Vehicle Act of 1935, as in the case of much of the foregoing legislation, was to a large extent designed and supported with the purpose in view of aiding state regulation. The controlling of motor vehicle transportation had become one of the most difficult problems of the states and the absence of occupancy of the interstate field magnified these difficulties. Solely from the standpoint of the states, the passage of this Federal act was a most necessary and expedient action.

IN the above-outlined legislation which was passed by the last two Congresses, we find the most effective and comprehensive range of regulatory ac-

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tion that has ever been attempted and attained in any like period. In fact, from the standpoint of utility regulation it well may be said all of the Congresses in the past together have not approached the accomplishment of these two sessions.

The most heartening thing about this legislation is that it is directed particularly to the protection of the individual consumer and investor. The tenth Amendment of the Federal Constitution—that Charter of State Sovereignty—is galvanized into new life and meaning. The rights of the states are here recovered and preserved. In the courts and commissions of the state is revested and maintained the full power reserved to them and which they may exercise exclusively as a primary matter. State regulation has been placed in the more dignified position it warrants and will be immensely strengthened because of that, as well as by the fuller occupation of the strictly interstate field by Federal agencies. This legislation in large measure breaks down the nationalization of control of utility service which has been accomplished by private manipulation through the corporate device in the past two decades, and returns the control to the situs of the major needs of regulation, at the door of the individual consumer.

ALL of this regulatory and salutary legislation has been obtained only by the most insistent effort. Most of it has been bitterly opposed by not all, but many of those who are temporarily in high command of the utilities involved just as state regulation was opposed some twenty-five years ago. This opposition comes from that very human repugnance to the restriction of individual desire, and that quality of greed, which refuses to recognize any public interest even in property dedicated to the public service. But, even these mediocrally inclined financial barons will soon go into other fields or become softened or supplanted, and their utility wares will be sold on the basis of legitimate supervision rather than upon un-

sound manipulation and deception. Those of us who have followed this transition in the field of state regulation will look with confidence to the evolution in the broader national arena.

Let us come now more particularly to the Federal Power Act. Title II of the Public Utility Act of 1935, consists of two parts under the administration of the Federal Power Commission. The first part comprises the former Federal Water Power Act of 1920, with certain amendments thereto and controls the licensing of water-power projects on government lands and on streams under the jurisdiction of the United States. The second deals with the regulation of electric utility companies engaged in the business of transmitting or selling electric energy in interstate commerce. It is the second part that especially engages our attention. The fundamental regulatory provisions of this act are confined to those already in force and adjudicated in the Federal field of railroad regulation under the Interstate Commerce Commission.

THE Power Act, however, does not extend Federal jurisdiction so far as the Interstate Commerce Act. Under it there can be no such control of local rates as occurs in conformity with the Shreveport Case under which state-fixed local railroad rates may be superseded by federally determined rates. However, one may see the wisdom behind the Shreveport Case where local and interstate services have developed immediately and equally; and where specific rail rates never have been and perhaps from a practical standpoint never can be fixed on a basis of property used and useful in the service. But, in the case of electric utilities the conditions have been the reverse. The early development of electric service has been geographically of a local nature in all its phases; generation, transmission, and distribution, and subject, therefore, to local regulation. The rail and electric service are entirely different in economic character. The rail performs only one function — transportation. Normally,

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electric service produces, transports, distributes, and sells as a combined process. Until recent years, however, this was almost wholly intrastate in character. Gradually interstate movement of power began to increase, being induced by the increasing use of the commodity; the development of hydro power far removed from the center of distribution; the scientific improvements in the transmission of energy, and the single ownership or control of power systems, spread over more than one state. By 1933, nearly 18 per cent of power generated was transmitted across state lines. No doubt this percentage will continue to increase, but however much it may grow there seems no reason to believe it will ever attain a significance that will necessitate a Shreveport treatment so far as local electric regulation is concerned. It is, nevertheless, an important thing to the states that the Federal government now steps in to control the wholesale price of interstate power where, as determined by the Supreme Court in the *Attleboro Case*, neither the state from which the power was transmitted nor the state into which it was received can exercise a control to protect its people against unjust or discriminatory rates.

WHILE the question of rates generally looms high in the consideration of utility regulation, as a matter of fact service is of equal if not more concern to most consumers. With this in view the law provides for the filing of complaints and the determination and enforcing by the commission of proper, adequate, and sufficient service on the part of interstate carriers. This is a provision of the law which probably will be among the least used, for the rapid growth toward universal use of power and development of the coordination of facilities will remove many impediments that purely local service has encountered in the past. In this connection one of the most important functions of the commission is that of encouraging the voluntary interconnection and coordination of power facilities with the ultimate power upon complaint of a state com-

mission or an electric utility to compel such coordination of use where the public interest demands. The less frequently such a compulsory power is formally exercised and the oftener such coordination can be accomplished by voluntary cooperation, the more satisfactory will be the public service.

The foundation of sound regulation lies in the true and proper accounting of all the transactions involved in financing, building, and operating the utility. Under the law the Federal Power Commission is empowered to prescribe the accounts and records that shall be kept by electric public utilities where necessary and appropriate for the administration of the act. It is specifically provided that the utilities are not relieved from keeping such accounts and records as may be prescribed by state law or state authority.

BECAUSE of the extreme importance of the accounting system itself and the great advantage to be gained from the standpoint of economy to the utilities and regulatory bodies, as well as usefulness to the public generally, the commission has approached this task in the hope that a system of accounts might be prescribed which would be universally adopted by the states. This would mean that all electric utilities, whether or not under the jurisdiction of this commission, would follow one system and would insure the recording and publishing of comparable statistics. Other attempts have been made to accomplish this and such failures have laid a basis now for success. In 1934, the National Association of Railroad and Utilities Commissioners appointed a committee consisting of the best accounting minds of the country, to work on such a system. The chief accountant of the Federal Power Commission sat as a member of that committee. It was the desire and determination of the National Association and of the Federal Commission, that an accounting system should be devised that could be generally adopted. Upon the passage of the Public Utility Act of 1935, a full coop-

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erative program was worked out between the National Association, the Federal Power Commission and the Securities and Exchange Commission. Under this the National Association postponed action on the report of the committee made to the National Convention in 1935, and all forces joined in an effort to more fully perfect the proposed system of accounts. A few states, notably New York and Wisconsin, had done advance work in this field.

As the combined effort progressed much work was done by individual commissions and there were held numerous and extended conferences of representatives of the states and Federal authorities. All of the states were contacted and their advice obtained. Utilities were given full opportunity to present their suggestions, both in written brief and oral conference. As a result, on June 16, 1936, the Federal Power Commission adopted the uniform system of accounts which had been approved by a large majority of the conference representatives of the commissions and which was later adopted for reference to the National Association by the executive committee of that association. Where differences existed between the conference members they were on details rather than fundamentals. The future promises fulfilment of the desire for accounting uniformity.

In the drafting of the Federal Power Act meticulous care was taken to preserve all the power of the states that was or could be exercised by them in the absence of Federal regulation. Whether anything along this line was overlooked is not apparent on the face of the act. Administration of the law will bring out any such defects. Administration also will demonstrate if the omissions of provisions for occupancy by the Federal government allowed at the time because of seeming interference with state regulation, may in reality leave gaps in the control.

THERE are two such questions which might be raised. No provision is

made, as is usual in regulatory measures, for the control of abandonment of service and property. There is no doubt about the power of Congress to control abandonment of interstate service and property and it has done so in the case of railroads since 1920. Whether state jurisdiction adequately can be extended to regulate facilities and service of a purely interstate character, is open to serious question. There is no doubt the state may police interstate utilities in some respects. But if the state cannot regulate such interstate business as to rates and service, upon what legal basis may it control as to abandonment? The other instance relates to the issuance of securities. The law provides that the Power Commission shall have jurisdiction of such issuance except in the case of a "Public utility *organized and operating* in a state under the laws of which its securities issues are regulated by a state commission." In the past considerable administrative difficulty has been encountered by the state in passing upon securities covering properties in one or more other states. Where there are substantial property interests in each state the difficulty has been present whether or not the utility was incorporated in the acting state. The above provision of the Federal Power Act will allow complete regulation of the interstate transaction only where the state has no authority over a utility organized and operating within its jurisdiction. In 1935, there were 18 of such states comprising generally those of lesser importance from the electric utility standpoint. This leaves the bulk of securities regulation in the same condition as has obtained heretofore. Undoubtedly much good could be accomplished by reciprocal and coöperative arrangements between the states and by uniformity of their laws. Whether these or other means can take the place of a fuller occupancy of the field by Federal authority, remains to be demonstrated.

THE regulation of rates by the Federal Commission raises the same problems as obtain in state regulation,

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except, the highly complicated question of the spread of rates. The Federal field is confined to wholesale rates and while the questions of justness, reasonableness, and discrimination will arise, the problem is simplified by the limitation on the number and character of rates, and the fact that they will generally be embodied in individual contracts. But, as a whole, the problems of the states and this commission are similar. To a large degree they are joint problems. They are made so by the terms of the law. While strict lines of demarcation are drawn to keep the Federal Commission off state reservations, the whole theory of the act demands the joint functioning of the two jurisdictions. The provisions for coöperation are more extensive here than in other Federal regulatory acts, going to the extent of providing for the use of Federal experts when needed by the state bodies. The states and this commission are fostering this spirit of coöperation as has heretofore been indicated, and much depends upon the completeness of such relation.

The most important thing in regulation is a simplification of the processes in reaching results. An important step will have been taken in the unification of accounting practices. But this only will be a start in the right direction. This commission is very desirous that Federal and state authorities working in unison may develop standards of regulatory practice that will greatly reduce the cost and time consumed in rate matters. Regulation to be properly effective must be immediate, whether rates are to be increased or decreased.

THE most disturbing element in regulation facing both state and Federal commissions, is the establishment of a property base upon which return to the utility shall be determined. The Supreme Court has said that this base shall be the fair value of the property. That means that the regulatory body is faced with the problem of determining rates by using two constantly changing and unknown quantities, fair value, and

rate of return. Added to this problem is the theory of reproduction cost new. There is no practical reason why the property base should not be a known and stable quantity and the rate of return estimated and allowed to fluctuate sufficiently to produce revenue ample to take care of the utility service requirements. There is no difference so far as property interest is concerned if 5 per cent is allowed on \$100,000 or 10 per cent on \$50,000. The main purpose is to provide adequate funds. But such a procedure is not as yet sanctioned. Under the legislative standards that the Supreme Court has imposed upon regulatory bodies, in order to carry out its idea of judicial determination, there has been laid upon such bodies an impracticable and, in most cases, an impossible practice. Many, many times has that court frowned upon the use of unproved theories, abstract fancies, and speculative formulas, "at war with realities," and yet, if there is one method of valuation that is impregnated with just such uncertain things it is reproduction cost new, which the court practically has said is the criterion for determination of fair value.

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the Judicial Code, became a law on May 14, 1934. This enactment divested the lower Federal courts of jurisdiction over the action of state regulatory bodies in the fixing of rates, where proper notice and hearing has been afforded and where state law gives adequate relief in the state courts. This means there has been removed the threat and practice of original interpretation by Federal courts of state law and legislative acts of state commissions; of long years of litigation and consequent suspense of the regulatory processes; of *de novo* proceedings in which the decision of the state commission may be annulled upon a record differing from that which was presented to it and upon which its judgment was based; and of the usurpation and control by the Federal courts through judicial proceeding of the legislative processes in the determination of local rates.

The Securities Act of 1933, and the Securities Exchange Act of 1934, consist largely of salutary legislation. Back of this legislation stands the tremendous work of the Federal Trade Commission, accomplished during the past eight or nine years, under the direction and authorization of Congress, in exploring corporate practices of holding companies in electric and gas public utilities.

THE two Securities Acts are what we would call in the states, "Blue Sky Laws." Their first purpose is to expose to view all the information necessary for the investing public to get a true picture of the nature and underlying soundness of the securities. The second purpose is to regulate securities exchanges and over-the-counter markets operating through the mails and in interstate and foreign commerce, and to prevent unfair and inequitable practices in the handling of securities transactions. These two pieces of legislation are of direct value to the states in bringing to public attention corporate relations and conditions sometimes beyond the legal power of the state to

inquire into, and in preventing undue manipulations of utilities stocks resulting in the building up of speculative values which in the light of the equity behind such stock, are impossible of fruition. One of the difficulties of state regulation is the existence of this fictitious value. As a matter of fact equitably there does not exist any speculative value behind the securities of a monopolistic public utility. Because of the obligations and limitations on both the utility ownership and the public served, there can exist actually only the less alluring but thoroughly safe fluctuations of stable investments.

Title I of the Public Utility Act of 1935, extends the power of the Securities and Exchange Commission to the control and regulation of holding company relations in cases of gas and electric companies, as to the purchase of securities and assets; as to their service, sales, construction, and other contractual relations, and as to their practices in the general control over subsidiary companies. The law prevents the evasion of state statutes by interstate means, notably as to the intermingling of electric and gas property control; it provides for the simplification of the corporate structures or the elimination of the holding control where such action is in the public interest; and it controls intercompany loans, dividends, and other transactions. While all of these provisions are directly or indirectly of much value, the control of fees and charges collected from subsidiary companies and the elimination of profit from such transactions, represent, perhaps, the outstanding benefits which will flow to state regulation from this enactment.

TITLE II of the Public Utility Act of 1935 extends the jurisdiction of the Federal Power Commission, by placing under it the regulation of electric utility companies engaged in interstate commerce. The purpose is to fill the vacuum that existed in the regulation of utility service through the absence of Federal regulation in a field

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beyond the powers of the states, and to have such legislation supplement and strengthen state regulation. This includes the control of the transmission of power to foreign countries and the control of the interstate field as to interconnection and coordination of facilities; consolidation and disposition of facilities; purchase or acquisition of securities of one utility by another; issuance of securities and assumption of liabilities where not regulated by a state; determination of just and reasonable wholesale rates and charges; the furnishing of adequate service; and the investigation into and compilation and publication of all facts regarding the generation, transmission, distribution, and sale of all electric energy, however produced and used in the United States and its possessions.

Whatever diversity of opinion may exist as to the Tennessee Valley Authority Act of 1933, there can be no doubt that the use of the so-called "yardstick" has had an immediate effect upon the reduction and stabilization of rates for electricity in the Tennessee valley states. This effect has not been confined to those states alone.

The Electric Rate Survey carried out under Senate Joint Resolution No. 74, issued April 14, 1934, by the Federal Power Commission, covering the entire service of electricity in the United States, has established fundamental data never before collated and from which criteria and comparisons are available for general and local use.

The effect of these last two pieces of legislation upon regulation is not capable of exact measurement but there can be no question that they have made it easier for various state commissions in the establishment of proper rates, and that they had a substantial effect in the reduction of charges for the use of electricity which has taken effect in the last two years, amounting to more than \$100,000,000.

EXECUTIVE Order No. 6251, issued August 19, 1933, authorized and directed the Federal Power Commission

to make a survey of the water-power resources of the nation; of the relation of water power to other industries, and to interstate and foreign commerce; and of the transmission of electrical energy and its distribution to consumers. The survey also was authorized under the provisions of the Federal Water Power Act of 1920, which had lain dormant for thirteen years. It was the first survey of its kind ever made in the United States. There has been general approval of this effort, and while it was primarily for the formation of a program of public works, its permanent value exists as a guide to future development and as an aid in obtaining the fullest degree of electric service, both interstate and intrastate.

The Communications Act of 1934 consolidated the authority of the several agencies theretofore partially occupying the interstate field and broadened the powers of the Federal agency to a comprehensive regulation of the telegraph, telephone, and radio. The telephone is here the matter of most importance to state commissions. Much information necessary to the regulation of telephone rates has not been available. The data now being collected by the Federal Communications Commission, when completed and coordinated, will be of great value in simplifying and making effective regulation by the state bodies of local telephone rates and service.

The Motor Vehicle Act of 1935, as in the case of much of the foregoing legislation, was to a large extent designed and supported with the purpose in view of aiding state regulation. The controlling of motor vehicle transportation had become one of the most difficult problems of the states and the absence of occupancy of the interstate field magnified these difficulties. Solely from the standpoint of the states, the passage of this Federal act was a most necessary and expedient action.

IN the above-outlined legislation which was passed by the last two Congresses, we find the most effective and comprehensive range of regulatory ac-

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tion that has ever been attempted and attained in any like period. In fact, from the standpoint of utility regulation it well may be said all of the Congresses in the past together have not approached the accomplishment of these two sessions.

The most heartening thing about this legislation is that it is directed particularly to the protection of the individual consumer and investor. The tenth Amendment of the Federal Constitution—that Charter of State Sovereignty—is galvanized into new life and meaning. The rights of the states are here recovered and preserved. In the courts and commissions of the state is revested and maintained the full power reserved to them and which they may exercise exclusively as a primary matter. State regulation has been placed in the more dignified position it warrants and will be immensely strengthened because of that, as well as by the fuller occupation of the strictly interstate field by Federal agencies. This legislation in large measure breaks down the nationalization of control of utility service which has been accomplished by private manipulation through the corporate device in the past two decades, and returns the control to the situs of the major needs of regulation, at the door of the individual consumer.

ALL of this regulatory and salutary legislation has been obtained only by the most insistent effort. Most of it has been bitterly opposed by not all, but many of those who are temporarily in high command of the utilities involved just as state regulation was opposed some twenty-five years ago. This opposition comes from that very human repugnance to the restriction of individual desire, and that quality of greed, which refuses to recognize any public interest even in property dedicated to the public service. But, even these mediocrally inclined financial barons will soon go into other fields or become softened or supplanted, and their utility wares will be sold on the basis of legitimate supervision rather than upon un-

sound manipulation and deception. Those of us who have followed this transition in the field of state regulation will look with confidence to the evolution in the broader national arena.

Let us come now more particularly to the Federal Power Act. Title II of the Public Utility Act of 1935, consists of two parts under the administration of the Federal Power Commission. The first part comprises the former Federal Water Power Act of 1920, with certain amendments thereto and controls the licensing of water-power projects on government lands and on streams under the jurisdiction of the United States. The second deals with the regulation of electric utility companies engaged in the business of transmitting or selling electric energy in interstate commerce. It is the second part that especially engages our attention. The fundamental regulatory provisions of this act are confined to those already in force and adjudicated in the Federal field of railroad regulation under the Interstate Commerce Commission.

THE Power Act, however, does not extend Federal jurisdiction so far as the Interstate Commerce Act. Under it there can be no such control of local rates as occurs in conformity with the Shreveport Case under which state-fixed local railroad rates may be superseded by federally determined rates. However, one may see the wisdom behind the Shreveport Case where local and interstate services have developed immediately and equally; and where specific rail rates never have been and perhaps from a practical standpoint never can be fixed on a basis of property used and useful in the service. But, in the case of electric utilities the conditions have been the reverse. The early development of electric service has been geographically of a local nature in all its phases; generation, transmission, and distribution, and subject, therefore, to local regulation. The rail and electric service are entirely different in economic character. The rail performs only one function — transportation. Normally,

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electric service produces, transports, distributes, and sells as a combined process. Until recent years, however, this was almost wholly intrastate in character. Gradually interstate movement of power began to increase, being induced by the increasing use of the commodity; the development of hydro power far removed from the center of distribution; the scientific improvements in the transmission of energy, and the single ownership or control of power systems, spread over more than one state. By 1933, nearly 18 per cent of power generated was transmitted across state lines. No doubt this percentage will continue to increase, but however much it may grow there seems no reason to believe it will ever attain a significance that will necessitate a Shreveport treatment so far as local electric regulation is concerned. It is, nevertheless, an important thing to the states that the Federal government now steps in to control the wholesale price of interstate power where, as determined by the Supreme Court in the *Attleboro Case*, neither the state from which the power was transmitted nor the state into which it was received can exercise a control to protect its people against unjust or discriminatory rates.

WHILE the question of rates generally looms high in the consideration of utility regulation, as a matter of fact service is of equal if not more concern to most consumers. With this in view the law provides for the filing of complaints and the determination and enforcing by the commission of proper, adequate, and sufficient service on the part of interstate carriers. This is a provision of the law which probably will be among the least used, for the rapid growth toward universal use of power and development of the coördination of facilities will remove many impediments that purely local service has encountered in the past. In this connection one of the most important functions of the commission is that of encouraging the voluntary interconnection and coördination of power facilities with the ultimate power upon complaint of a state com-

mission or an electric utility to compel such coördination of use where the public interest demands. The less frequently such a compulsory power is formally exercised and the oftener such coördination can be accomplished by voluntary coöperation, the more satisfactory will be the public service.

The foundation of sound regulation lies in the true and proper accounting of all the transactions involved in financing, building, and operating the utility. Under the law the Federal Power Commission is empowered to prescribe the accounts and records that shall be kept by electric public utilities where necessary and appropriate for the administration of the act. It is specifically provided that the utilities are not relieved from keeping such accounts and records as may be prescribed by state law or state authority.

BECAUSE of the extreme importance of the accounting system itself and the great advantage to be gained from the standpoint of economy to the utilities and regulatory bodies, as well as usefulness to the public generally, the commission has approached this task in the hope that a system of accounts might be prescribed which would be universally adopted by the states. This would mean that all electric utilities, whether or not under the jurisdiction of this commission, would follow one system and would insure the recording and publishing of comparable statistics. Other attempts have been made to accomplish this and such failures have laid a basis now for success. In 1934, the National Association of Railroad and Utilities Commissioners appointed a committee consisting of the best accounting minds of the country, to work on such a system. The chief accountant of the Federal Power Commission sat as a member of that committee. It was the desire and determination of the National Association and of the Federal Commission, that an accounting system should be devised that could be generally adopted. Upon the passage of the Public Utility Act of 1935, a full coöp-

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erative program was worked out between the National Association, the Federal Power Commission and the Securities and Exchange Commission. Under this the National Association postponed action on the report of the committee made to the National Convention in 1935, and all forces joined in an effort to more fully perfect the proposed system of accounts. A few states, notably New York and Wisconsin, had done advance work in this field.

As the combined effort progressed much work was done by individual commissions and there were held numerous and extended conferences of representatives of the states and Federal authorities. All of the states were contacted and their advice obtained. Utilities were given full opportunity to present their suggestions, both in written brief and oral conference. As a result, on June 16, 1936, the Federal Power Commission adopted the uniform system of accounts which had been approved by a large majority of the conference representatives of the commissions and which was later adopted for reference to the National Association by the executive committee of that association. Where differences existed between the conference members they were on details rather than fundamentals. The future promises fulfilment of the desire for accounting uniformity.

In the drafting of the Federal Power Act meticulous care was taken to preserve all the power of the states that was or could be exercised by them in the absence of Federal regulation. Whether anything along this line was overlooked is not apparent on the face of the act. Administration of the law will bring out any such defects. Administration also will demonstrate if the omissions of provisions for occupancy by the Federal government allowed at the time because of seeming interference with state regulation, may in reality leave gaps in the control.

THERE are two such questions which might be raised. No provision is

made, as is usual in regulatory measures, for the control of abandonment of service and property. There is no doubt about the power of Congress to control abandonment of interstate service and property and it has done so in the case of railroads since 1920. Whether state jurisdiction adequately can be extended to regulate facilities and service of a purely interstate character, is open to serious question. There is no doubt the state may police interstate utilities in some respects. But if the state cannot regulate such interstate business as to rates and service, upon what legal basis may it control as to abandonment? The other instance relates to the issuance of securities. The law provides that the Power Commission shall have jurisdiction of such issuance except in the case of a "Public utility organized and operating in a state under the laws of which its securities issues are regulated by a state commission." In the past considerable administrative difficulty has been encountered by the state in passing upon securities covering properties in one or more other states. Where there are substantial property interests in each state the difficulty has been present whether or not the utility was incorporated in the acting state. The above provision of the Federal Power Act will allow complete regulation of the interstate transaction only where the state has no authority over a utility organized and operating within its jurisdiction. In 1935, there were 18 of such states comprising generally those of lesser importance from the electric utility standpoint. This leaves the bulk of securities regulation in the same condition as has obtained heretofore. Undoubtedly much good could be accomplished by reciprocal and cooperative arrangements between the states and by uniformity of their laws. Whether these or other means can take the place of a fuller occupancy of the field by Federal authority, remains to be demonstrated.

THE regulation of rates by the Federal Commission raises the same problems as obtain in state regulation,

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except, the highly complicated question of the spread of rates. The Federal field is confined to wholesale rates and while the questions of justness, reasonableness, and discrimination will arise, the problem is simplified by the limitation on the number and character of rates, and the fact that they will generally be embodied in individual contracts. But, as a whole, the problems of the states and this commission are similar. To a large degree they are joint problems. They are made so by the terms of the law. While strict lines of demarcation are drawn to keep the Federal Commission off state reservations, the whole theory of the act demands the joint functioning of the two jurisdictions. The provisions for coöperation are more extensive here than in other Federal regulatory acts, going to the extent of providing for the use of Federal experts when needed by the state bodies. The states and this commission are fostering this spirit of coöperation as has heretofore been indicated, and much depends upon the completeness of such relation.

The most important thing in regulation is a simplification of the processes in reaching results. An important step will have been taken in the unification of accounting practices. But this only will be a start in the right direction. This commission is very desirous that Federal and state authorities working in unison may develop standards of regulatory practice that will greatly reduce the cost and time consumed in rate matters. Regulation to be properly effective must be immediate, whether rates are to be increased or decreased.

THE most disturbing element in regulation facing both state and Federal commissions, is the establishment of a property base upon which return to the utility shall be determined. The Supreme Court has said that this base shall be the fair value of the property. That means that the regulatory body is faced with the problem of determining rates by using two constantly changing and unknown quantities, fair value, and

rate of return. Added to this problem is the theory of reproduction cost new. There is no practical reason why the property base should not be a known and stable quantity and the rate of return estimated and allowed to fluctuate sufficiently to produce revenue ample to take care of the utility service requirements. There is no difference so far as property interest is concerned if 5 per cent is allowed on \$100,000 or 10 per cent on \$50,000. The main purpose is to provide adequate funds. But such a procedure is not as yet sanctioned. Under the legislative standards that the Supreme Court has imposed upon regulatory bodies, in order to carry out its idea of judicial determination, there has been laid upon such bodies an impracticable and, in most cases, an impossible practice. Many, many times has that court frowned upon the use of unproved theories, abstract fancies, and speculative formulas, "at war with realities," and yet, if there is one method of valuation that is impregnated with just such uncertain things it is reproduction cost new, which the court practically has said is the criterion for determination of fair value.

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property. For the rest of the property that commission took historical cost as the best legislative criterion for rate-making purposes. This seemed a logical thing to do inasmuch as cost, in good business practice, is recorded and certain, and in a growing and developing industry reflects the mean of changing price levels, thereby indicating not only investment but, over a period of time, a reasonable fair value, and further because it is a simple, inexpensive, and expeditious criterion. And, in order to escape as far as possible from the inferno of depreciation, the California commission used an undepreciated rate base with a correlative adjustment in expense.

UNDER this procedure the utilities of California have prospered for over twenty years, completely invalidating the lamentations of those who predict gloom for the industry from the abandonment of reproduction cost new. They have been able easily and adequately to finance; have been operating on low rates to consumers; have built strong reserves; and have given good service. During all of that period with only two or three exceptions the utilities have acquiesced in this method. Evidently their properties have not been confiscated. Therefore, it may be said that that procedure has been proven to be a means of obtaining legal results. When the Los Angeles Gas and Electric Corporation Case, in which rates had been fixed on the California historical cost basis, was decided in favor of that commission on May 8, 1933, many of us thought a turning point had come and that the future was bright for the application of practical methods in regulation. Following that decision the Los Angeles Company refunded impounded money and within three months voluntarily reduced its rates below those fixed by the commission, and has since followed periodically with other reductions. Evidently the projection of rates into the future by the commission under the historical cost method did not bring about confiscation of that property, and cer-

tainly the Supreme Court was amply justified in upholding the California commission's findings.

Three years later, however, we were startled by the decision in the Baltimore Telephone Case. While the Maryland commission seemed to have followed as closely as humanly possible the pronouncements of the court up to that time, in determining the value of the utility property, whether it did so, however, is not nearly so important as is the holding of the court, that it would not consider the confiscatory character of a rate order of a state commission, unless the record showed that the commission had arrived at its results by the long, expensive, and circuitous route of having before it, and carefully weighing, all the elements the court has declared as proper for consideration in determining rates.

NOW just what are commissions to do, faced as they seem to be, with either impossible procedure or defeat in the higher court? A bird's-eye view of the situation would indicate that not only the commission but the court itself, needs some help. Where there is a wrong (and a great wrong is being imposed on regulation) there should be a remedy.

It is my personal conviction that there is a substantial remedy which may be applied and I will have the temerity to suggest it to you today. It is that the Judicial Code again be amended, this time by providing:

First: That where, after proper notice and opportunity for hearing, rates fixed by a Federal or state commission are found by a court to produce a fair return upon the original or historical cost of the property devoted to and useful in the public service, the evidence supporting such finding shall constitute *prima facie* proof that such rates are just and reasonable.

Second: That no such order of an administrative commission shall be set aside, modified, enjoined, suspended, or restrained by any court upon constitutional grounds unless the court shall

find that such rates are confiscatory.

The first provision establishes a rule of evidence which unquestionably may be imposed upon the judiciary, and indicates a criterion upon which the consideration of rates may be stabilized. The second constitutes a legislative interpretation of the rights of the regulatory

body and the consumer to a decision upon the merits of a case rather than upon procedural technicalities.

Legislation of this character to my mind is imperative if full and proper effect is to be given to the Federal Power Act and the regulatory laws of the states.

The Regulation of Public Utilities in Massachusetts

By HENRY C. ATTWILL*

THE development of public utility regulation in the United States has been most rapid since the beginning of the century and, like most expending governmental functions, its progress has been frequently impeded by abundant criticism and controversy. Possibly no theory of rate regulation has been more thoroughly discussed than our Massachusetts rule, based upon an adequate return on the capital paid into a utility by its stockholders, sometimes referred to as the "prudent investment" theory. Because this theory has not generally found favor with other regulatory bodies and perhaps, too, because a majority of the United States Supreme Court has been unwilling to recognize it, there has been a common misconception of its origin and the sound principle upon which it is based, leading to the belief by some that it is to be classed with the nostrums of latter-day quacks and theorists.

The truth is, however, that the Massachusetts system of rate regulation antedates all others in America. It has stood the test of time. On the whole, it has dealt fairly with those using the service while preserving the integrity and stability of the utility companies' investments. Massachusetts, I think it can safely be asserted, was the first state of the Union to attempt the regulation of public utilities, which in the beginning it did by direct action of the leg-

islature. In 1804 an act was passed regulating turnpike companies by fixing rates for use of the turnpikes and providing for the lodging, within six months of the erection of their gates, of the cost of the turnpike and the exhibition annually to the governor and council of a true account of their income or dividends, with their necessary annual disbursements on the road.

It was provided, also, that when it should appear to the satisfaction of the legislature that the income of the road had "compensated the corporation for all money that had been expended in purchasing lands for the road and in making, repairing, and taking care of the same, together with 12 per centum by the year," the corporation might be dissolved and the property of the road should be vested thereupon in the commonwealth.

WITHIN the generation next following, the coming of the railroads, bringing a new era in travel and transportation, saw the incorporation of this same common-sense rule with respect to their operation. Soon after the building of the first of our Massachusetts railroads, the legislature took steps to provide for a record of their construction costs, their receipts and expenditures, by requiring the companies to submit annual reports thereof. It made provision also that the commonwealth might purchase any railroad, after the expiration of twenty years from its opening

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for use, by paying for the property a price sufficient to reimburse the company the amount of capital paid in, with a net profit thereon of ten per cent per annum from the time of payment by the stockholders until the time of the purchase.

These provisions were adopted in 1836, and this plan for the prospective purchase of a railroad by the public became known as the "Recapture Clause." It may be seen that the enactment of this statute was an extension of the principles adopted thirty-two years before in relation to turnpikes. The underlying thought was that stockholders in such a utility did not have an absolute right or title to the property acquired by their capital, but that it was held in trust for the public and that the stockholders, having devoted their money to the public use, were entitled to a return—not upon the value of the property employed in such a service, but upon the invested capital itself.

As early as 1842, in the case of *Worcester v. The Western R. Corp.*¹ it was said by that great Chief Justice of our supreme judicial court, Lemuel Shaw:

It is true, that the real and personal property, necessary to the establishment and management of the railroad, is vested in the corporation; but it is in trust for the public. The company have not the general power of disposal, incident to the absolute right of property; they are obliged to use it in a particular manner, and for the accomplishment of a well-defined public object.

In 1846 the legislature established the first uniform classification of accounts for railroads by providing the form in which they should make their annual reports to the legislative body. In 1858, it further provided for a form of reports to be made by horse or street railway corporations, which form was changed from time to time until 1871, when street railways were required to make their returns to the board of railroad commissioners, which had been established in the intervening period. In

1874 the railroads also were required to make their returns to that board, which was given the power to determine their form.

Our legislature had been prompt to recognize the necessity for regulation of capital in order to insure against the watering of railroad stocks, enacting a statute in 1852 which provided that no railroad corporation thereafter organized, nor any then obtaining an extension of time for the construction of its road, should

issue any stock for a less sum or amount, to be actually paid in on each, than the par value named in its charter.

Later provisions were enacted relative to issues of stock by railroads and street railway companies, all of them designed to insure the issuance of stock at not less than par and to be paid in cash.

Gas companies, until 1855, were organized by special charter, but in that year provision was made for their organization under General Laws, subject to the laws relating to manufacturing corporations, which brought them likewise under the prohibition against issuing shares of stock for less than their par value.

IN 1868, the legislature provided

that no railroad corporation, telegraph or gas light company, chartered under the laws of this commonwealth, shall hereafter declare any stock dividend, or divide the proceeds of the sale of stock amongst its stockholders, nor shall such corporation create any additional new stock, or issue certificates thereof to any person whatever, unless the par value of the shares so issued is first paid in cash to the treasurer of the corporation.

In 1894, this statute was amended to include telephone, electric, aqueduct, and water companies and to apply to scrip as well as stock.

This statute has played a very important part in the regulation of utilities in Massachusetts, for the reason that commissions have felt that the statute, in spirit at least, prohibited them from approving the issuance of stock or bonds for the purpose of reimbursing

¹ 4 Metcalf, 564.

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the company for additions and improvements paid for by earnings. Thus in Massachusetts it has not been the practice to approve the issue of stock or bonds, as is the practice in other states, to reimburse the company's treasury for expenditures made for additions and improvements.

This history, I think, disposes of the notion held by some that the Massachusetts principle that the regulation of rates should be guided by the amount of capital honestly and prudently invested by the stockholders, rather than by the value of the property employed, is of recent origin. It will be seen that it has been the basis governing successive acts of the legislature for now 132 years.

THESE statutes undoubtedly were the result of the view held consistently throughout that time that a public utility, given special privileges as it is, including the sovereign power of eminent domain, is a government agency, where the capital is devoted to a public purpose, which is carried on through a *quasi* private management, and that those who contribute the capital should be compensated for its use by the public. Provisions regulating the issue of stock for cash and for not less than the par value thereof were largely influenced by the thought that the par value of the outstanding stock, plus the long-term indebtedness, would usually furnish a fair measure of the cost of the plant employed in the undertaking.

The regulation by commission began in 1869, with the establishment of a board of railroad commissioners. The board was given general supervision over railroads and street railways. It had no power to order changes in rates or service until 1913, when its name was changed to that of the public service commission. In these respects it was limited to making recommendations. Nevertheless I understand it to be true that during this period of over forty years all but one of its recommendations were adopted. This splendid record has led many people to believe that this method of regulation was

superior to that which now obtains.

IN 1885, the board of gas commissioners was established. This board was given general supervision over corporations engaged in the manufacture of gas for lighting and fuel, and such corporations were required to make annual returns of their financial condition to the board. In 1887, it was given jurisdiction over electric companies to the same extent exercised over gas companies and its name was changed to that of the board of gas and electric light commissioners. The board was not given general power over rates. It was given the power, however, upon complaint of the mayor of a city, the selectmen of a town, or twenty customers, to order a reduction in the price of gas or an improvement in its quality. In 1888, it was provided by law that the maximum price of gas fixed by the board should not be increased except upon application to the board. This provision later was extended to electric companies and remained the law in relation to fixing the price of gas and electricity until 1927. In 1886, gas companies were required to keep their books and accounts in such form as the board should require and provision was made that the board, upon petition, might order a company to supply service. These provisions were extended to electric companies in 1887.

STATUTES were passed in 1893, and in 1894, requiring railroads, railways, gas, electric, aqueduct, and water companies, and corporations transmitting intelligence by electricity, whenever they proposed to increase their capital stock in excess of 4 per cent of the stock then outstanding, to first offer such stock proportionately to their stockholders at not less than its market value at the time of increase. The market value was to be determined by the board of railroad commissioners in the case of railroad and street railway companies, by the board of gas and electric light commissioners in the case of gas and electric companies, and by the commissioner of corporations in the case of aqueduct, water compa-

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nies, and corporations engaged in the transmitting of intelligence by electricity. It was provided also that any balance not subscribed for by the stockholders should be sold at not less than the par value of the stock at public auction.

In 1908, the legislature decreed that any railroad, street railway, electric railroad, or elevated railway company should upon any increase of its capital stock offer the new shares proportionately to its stockholders at such price, not less than its par value, as might be determined by the stockholders. It was provided, also, that the board of railroad commissioners might refuse to approve any particular issue of stock if, in the opinion of the board, the price fixed by the stockholders was so low as to be inconsistent with the public interest.

In 1909, it was enacted by statute that a gas or electric light company should, upon any increase of its capital stock, offer the new shares proportionately to its stockholders at such price, not less than the par value thereof, as might be determined by its directors, and that the board of gas and electric light commissioners, if, in their opinion, the price set by the directors was so low as to be inconsistent with the public interest, might determine the price at which such shares should be issued.

IN 1913, when the name of the board of railroad commissioners was changed to that of the public service commission, its powers were materially enlarged. It was given general jurisdiction over railroads, street railways, and steamships, including express service and car service maintained upon or rendered in connection with railroads, street railways, or steamships. It was given jurisdiction, also, over companies engaged in the transmission of intelligence within the commonwealth by electricity.

In 1914, water companies were made subject to the laws applying to gas and electric companies in the increase of capital stock and in 1918, the power to de-

termine the price at which new stock should be issued by companies engaged in the transmission of intelligence by electricity was taken from the commissioner of corporations and vested in the public service commission.

The public service commission and the board of gas and electric light commissioners were consolidated in 1919, to form the present department of public utilities. It will be noted that the department's jurisdiction at the time of its organization was not the same as to gas and electric companies as it was in relation to railroads, street railways, and companies engaged in the transmission of intelligence by electricity. In the regulation of rates of gas and electric companies it had no initiative and its power largely was limited to fixing, upon petition, the maximum price at which gas or electricity should be sold.

MANY additional powers have been conferred upon the department since its organization, substantially all of which have been upon its own recommendation. Among the most important of these, in my opinion, were the following: An act authorizing the department to order companies under its jurisdiction to set aside from earnings allowances to a depreciation fund and to prescribe requirements for the creation and maintenance of the fund and the uses to which it should be devoted; an act passed in 1923, authorizing electric companies to coöperate in the establishment of generating plants to supply them with electricity; an act passed in 1926, prohibiting any electric company from entering into a contract for the purchase of electricity for periods in excess of three years without the approval of the department, unless the contract contained a provision subjecting the prices at which electricity was to be sold under the contract to review and determination in any proceeding involving the rates of the company; an act passed in 1927, giving the department general jurisdiction over rates of gas, electric, and water companies, with provision for filing of their rates; and an act passed in 1929,

APPENDIX—AMERICAN BAR ASSOCIATION ADDRESSES

providing a more convenient method by which cities and towns might establish municipal plants; and an act passed in 1932, prohibiting gas and electric companies from lending their funds without approval of the department.

THESE provisions, other than the act of 1927, I think are somewhat unique in rate regulation. The act of 1921, giving the department power to make orders relating to depreciation, is, in my opinion, the most important act that has been enacted in Massachusetts in the interest of sound utility regulation since the act of 1868, prohibiting stock dividends or the use of money not earned in the payment of dividends. Proper provision for depreciation seldom is attained by public utilities and the public attitude toward the creation of a proper depreciation reserve generally has prevented its achievement.

To my mind, the theory of accountants and engineers that depreciation reserves are established to take care of the depreciation and obsolescence of property is too limited a view of their purpose.

I believe that a depreciation reserve should be looked upon as an insurance fund to preserve the integrity of the stockholders' investment. It should be substantial enough not only to provide for replacing worn out and obsolete parts, but to meet the requirements of progressive changes in the art of carrying on the purposes of the undertaking. Looking at it in this way I am opposed, naturally, to the idea that stockholders are entitled to a return upon that part of the property employed represented by the depreciation reserve. The public, having created such an insurance fund by their contributions, ought not to be required to pay a return upon it. It has not been the practice of Massachusetts to allow a return upon the depreciation reserve and I doubt that it ever will be. With the power given the department under the 1921 act, it is in a position to order specific amounts to be set aside for depreciation at specified times prior

to the payment of dividends, in cases in which it appears the provisions for depreciation are inadequate.

THE act of 1923, authorizing the establishment of coöperative generating plants, is an answer to those who argue that holding companies are necessary for the development of the electric industry.

The growing control of our electric companies by holding companies and the cases of *Houston v. Southwestern Bell Teleph. Co.*² and *Missouri ex rel. Southwestern Bell Teleph. Co. v. Public Service Commission*,³ which seemed to indicate that contracts between a holding company and its subsidiaries could not be disregarded by regulatory bodies merely because the holding company controlled both sides of the bargain, brought about the passage by our legislature of the act of 1926. It was felt by my associates and myself that the situation could be controlled by prescribing what contracts the operating companies in Massachusetts, all of which are incorporated under laws of the commonwealth, could make. In 1930, the period for which contracts for the purchase of electricity could be made without the approval of the department was further limited to two years and the provisions of the act were extended to gas companies.

The 1929 act, providing a more convenient method for cities and towns to establish municipal plants to supply their inhabitants with gas or electricity, grew out of successive recommendations by the department for the establishment of contracts with companies by which, in exchange for a readjustment of the capital of the companies and the issue of stock thereafter at par, the companies would agree that the state might regulate their rates as it should determine, so long as such regulation should not prevent the company from paying dividends sufficient to maintain the market value of its stock at par.

² 259 U. S. 318, P.U.R.1922D, 793.

³ 262 U. S. 276, P.U.R.1923C, 193.

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THESE recommendations by the department resulted from increasing activity by holding companies in purchasing stock in operating companies doing business in the commonwealth. Two decisions of the commission were under attack in the Federal courts, and it was felt that the Massachusetts policy of regulation was in peril. The commission had some misgivings as to a contract bill, as experience had tended to show that contracts with the state, as a practical matter, usually bound only the state. Finally, in 1929, Henry L. Shattuck, who was then a member of the legislature, suggested a substitute bill, which the commissioners felt was superior to the contract bill. The bill, as drawn by Mr. Shattuck, passed the house, but amendments made by the senate somewhat impair the efficiency of the act. As time goes on, I feel confident that the changes made by the senate will be modified and that the act eventually will be restored substantially to the form drawn by Mr. Shattuck. In substance, the act provides that when a city or town has voted, as required by law, to establish a municipal lighting plant, it may purchase from the company then supplying its inhabitants with electricity such portion of the plant of the company situated in the community as the municipality desires and upon such terms as may be agreed. Upon failure to agree within 150 days, either the municipality or the company may apply to the department for a determination of what property ought, in the public interest, to be included in the purchase and what price should be paid. If within thirty days of the determination of the department the company shall notify the municipality of its acceptance and within a further thirty days shall tender a good and sufficient deed of conveyance to the municipality, the municipality shall have sixty days in which to accept or reject the deed; and if it accepts, shall have a further sixty days to pay the price determined. A rejection of the tender shall act as a rescission of all votes

taken by the municipality to establish a municipal plant. If the company fails to file an acceptance of the determination of the department, the municipality may proceed to establish a municipal plant without purchasing any property from the company. Thus, if the people of a given community think that they are being treated unfairly by an electric company, the door is open to them to supply the service themselves.

THE act of 1932 was a result of a growing practice by holding companies of securing loans from operating companies, the control of whose stock they had acquired and whose credit, as a usual thing, was superior to that of the holding company.

All of these provisions of law were designed to maintain the traditional policy of the commonwealth in the regulation of public utilities. With these provisions and the power to disregard, in determining rates, the excess of any payments made for management or other services above those found to be reasonable as operating expenses, the department has not believed it necessary to support measures designed to regulate holding companies and the securities issued by them. If we succeed in regulating the operating company effectively, the activity of the holding company can have but slight effect upon the rates and service, which, primarily, it is our object to regulate.

The provisions of law which require the issue of stock at prices found to be not so low as to be inconsistent with the public interest have been the cause of some embarrassment in the regulation of rates. They result, in some instances, in the payment of what appear to be excessive dividends, but which in fact are not, considering that dividends are declared upon the par value of the stock. To illustrate:

THE Edison Electric Illuminating Company of Boston is now paying dividends of 8 per cent upon the par value of its stock. Actually they

APPENDIX—AMERICAN BAR ASSOCIATION ADDRESSES

amount to less than 5 per cent upon what actually has been paid in by stockholders for the outstanding stock, the average being about \$169 a share, the extra \$69, of course, representing the premium at which it was sold. In many other electric companies which in years past adopted a more conservative policy than that of the Edison, this situation is much more marked. Again, in some instances it has resulted in a kind of equitable capitalization of a part of the surplus of the company, as a public board necessarily finds it difficult to assert that shares are worth a certain value at one time, requiring them to be sold at that value, and directly afterward, when determining reasonable rates to be charged by the company, to determine that they are of a much lower value. As these laws are not generally understood by the public, the department has been persistently criticized, and by some who should know better, on the ground that it has permitted extortionate rates, resulting in the payment of excessive dividends. In 1922, a majority of the commission, of which I was one, recommended the repeal of these statutes, but the legislature determined otherwise. Whatever may be said in criticism of these provisions of law, I believe, on the whole, during the more than forty years they have been in effect, that as a practical matter they have not worked badly. It must be borne in mind that they were passed before the decision of *Smyth v. Ames* was even dreamed of, and at a time when regulatory bodies had no control over the depreciation reserves of the companies. These laws encouraged the thrifty New England habit of making provision for the rainy day, as they resulted in the building up by most companies of splendid surpluses which were "plowed" back into the properties and which was but another way of making provision for depreciation. They reduced to a very marked extent the amount of stock and bonds upon which dividends and interest were required to be paid.

CRITICISMS of the Massachusetts system of regulation have been made at times that it does not readily lend itself to reduction of rates in periods of depression and hard times. I think this is true. Based as it is upon the theory that a utility company is performing a public service which otherwise might properly be performed by the state, or its subdivisions, it is confronted with the same problems with which cities and towns are confronted in times of depression in relation to their taxes. Unless the utility can reduce materially its operating expenses, or increase the volume of its business in such periods, reductions of rates usually are not warranted, except by the extent to which it can be found that less dividends are required to maintain its stock at approximately the amount that has been paid into the treasury for it. As a matter of fact, operating expenses of utilities in times of depression seldom materially decrease because of the vigorous increases in taxes imposed upon them during such periods. Thus it is true that in Massachusetts reductions in rates of utilities in the present depression have not been as frequent or as substantial as they were in the days of prosperity preceding the depression.

ON the whole, I believe Massachusetts may well be proud of its regulation of utilities. For well over a half a century regulation by commissions has obtained. The men who have constituted the commissions have usually been men of ability, actuated by a high sense of public duty. The policies and practices of successive commissions have been built up step by step upon the policies of their predecessors, except where it appeared that they were clearly in error, or to meet changed conditions, and with a recognition that in performing their functions their predecessors were actuated by conscientious and unselfish motives. Resort to the courts has been infrequent. Applications by companies to the Federal courts in relation to rates

PUBLIC UTILITIES FORTNIGHTLY

have occurred in only three cases, none of which went beyond the district court.

In the seventeen years I have been connected with regulation in Massachusetts only one order has been set aside and that by the supreme judicial court of the commonwealth.

I know of no instance except one where it can be said in fairness that regulation in Massachusetts has in any way contributed to the financial disaster of a company. The credit of the companies under the regulation has stood high, as witness the flotation of the recent bond issue of \$53,000,000 by the Boston Edison Company, for a period of thirty years, at a little over 3 per cent, the lowest rate, I am advised, that has been secured in this country by a privately operated utility company.

CRITICISMS directed at the department recently that it has permitted "many electric companies throughout the period of 1922 through 1934" to obtain excessive earnings, and that the companies have been allowed to charge "what the tariff will bear," are answered by the fact that the net earnings of few electric companies, if any, in the commonwealth are as large as the companies would be allowed under the Federal rule of regulation, and by the further fact that, on the average, the rates of companies supplying at least 70 per cent of the domestic customers of the state have been reduced to such customers, between the years 1921 and 1935, inclusive, to those using 50 kilowatt hours a month, 46.69 per cent; to those using 40 kilowatt

hours a month, 44.37 per cent; to those using 30 kilowatt hours a month, 40.98 per cent; and to those using 20 kilowatt hours a month, 37.61 per cent. Moreover, this was accomplished during a period when taxes, figured on cents for each dollar of income of the same companies, rose 19.51 per cent in the instance of the company where the increase was the least, to 194.23 per cent as to the company where the increase was the greatest, and 100.89 per cent upon the Edison Company of Boston, which by far supplies the largest number of customers.

FURTHERMORE, the number of municipal plants in the commonwealth in 1921 was 41, and the number of such plants on January 1, 1936, excluding a tiny plant on the island of Cuttyhunk, which supplies fifteen all-year-round customers and about thirty-four customers in the summer, was still 41. Two of those which were in business in 1921 have been sold. Four new plants were established in the period, two of which have been sold. Since 1927 not a single new municipal plant has been established. If what the critics have to say about excessive rates is true, it seems strange that there has been such little growth in public ownership and operation during the period, especially in view of the act of 1929 making it so much simpler than formerly to establish a municipal plant.

Whether regulation be successful or fail depends largely upon the character and courage of the men appointed to administer it. If made the football of politics it cannot succeed.

A Public Ownership Congressman Prays for the Supreme Court

"WILL those nine men turn these mothers back into the dark, or drive them back to the wash-tub and the scrub-board, in order to gratify the cupidity of the Power Trust and enable them to continue to wring from the American consumers \$1,000,000,000 a year in overcharges for electric lights and power? Shades of George Washington, Benjamin Franklin, and Thomas A. Edison! May your immortal spirits whisper to the Supreme Court as they consider this great question that affects the happiness and well-being of the American people for all time to come!"

—JAMES RANKIN,
U. S. Representative from Mississippi.

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Public Utilities Reports

COMPRISING THE DECISIONS, ORDERS, AND
RECOMMENDATIONS OF COURTS AND COMMISSIONS



VOLUME 15 P.U.R.(N.S.)

NUMBER 1

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PUBLIC UTILITIES REPORTS

MISSOURI PUBLIC SERVICE COMMISSION

Public Service Commission of Missouri

v.

Missouri Public Service Company

[Case No. 7806.]

Valuation, § 413 — Evidence — Reproduction cost — Detailed inventory.

1. Greater weight was given to estimates made by Commission engineers, especially with reference to the reproduction cost of such items as poles, towers and fixtures, conductors and transformers in electric property, and the installation of mains and services of gas property and mains in water property, where the Commission engineers made more detailed studies and analyses than were made by company engineers before pricing the property, p. 11.

Valuation, § 232 — Nonutility property — Coal mines.

2. A coal mine owned by a public utility company and used exclusively by the company's electric generating plants at certain points, no coal being sold to the general public, was considered as a separate enterprise producing and selling coal to the electric department, where the mine had not been considered as part of the used and useful electric property by company engineers and where Commission accountants, in arriving at the cost of production of electricity, included coal purchased by the electric department from the coal mine at market prices, p. 12.

Valuation, § 143 — Overheads — Preliminary organization, legal, and miscellaneous expenses.

3. An allowance of 2.5 per cent for preliminary organization, legal, administrative, and miscellaneous expenses of a combined utility was held to be adequate and to give sufficient consideration to the fact that the company's properties were spread out over a considerable area, p. 13.

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Valuation, § 124 — Overheads — Basis.

4. An allowance for preliminary organization, legal, administrative, and miscellaneous expenses should be applied to the cost of reproduction of the property exclusive of land and easements and general equipment, p. 13.

Valuation, § 135 — Overheads — Engineering and superintendence.

5. An allowance of 5 per cent on all items except land, easements, and general equipment for engineering and superintendence during construction, as recommended by Commission engineers, was allowed in the case of a combined utility rather than 4 per cent on all items, including land and general equipment (but indicated as not provided for detailed plans, working drawings, and field supervision included in primary accounts) as recommended by company engineers, where the Commission had given greater weight to the Commission's engineers' estimate of cost of reproduction of the various items of property, p. 13.

Valuation, § 150 — Overheads — Taxes during construction.

6. An allowance of .5 per cent on all items except easements and general equipment was held to be ample for taxes during construction in view of the fact that in actual construction taxes during construction are not always paid, p. 14.

Valuation, § 140 — Overheads — Interest during construction.

7. A construction period of one and one-half years for the property of a combined electric, gas, and water utility company as a whole was held to be sufficient, and an interest rate of 6 per cent was considered reasonable, p. 14.

Valuation, § 124 — Overheads — Basis — Interest during construction.

8. Interest during construction was allowed on all items exclusive of general equipment since these might reasonably be purchased at the end of the construction period, and the Commission included in the calculation all general overheads previously allowed, the Commission being of the opinion that since a number of parcels of land involved were small and could reasonably be purchased at different times during the construction period the interest calculation should not be on the theory that all land was purchased at the beginning of the construction period, p. 14.

Valuation, § 93 — Accrued depreciation — Items depreciable — Overheads.

9. No deduction was made for depreciation of preliminary organization, legal, administrative, and miscellaneous expenses, where the items (not being separable) were treated as an entirety, although administrative and miscellaneous expenses related to the physical property should be depreciated, p. 15.

Valuation, § 114 — Cost of financing.

10. No allowance should be made for cost of financing, brokerage charge, bond discount, or any cost of obtaining money in arriving at reproduction cost, since any consideration of the cost of money is permissible only in estimating the investment or original cost of the property, p. 16.

Valuation, § 332 — Going concern value — Separate allowance.

11. No separate finding of going concern value was made, but consideration was given in arriving at the fair value of the plant to the character of physical plant, the management and personnel of the company, the rates being charged by the utility, and its operating status, p. 17.

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Depreciation, § 47 — Automobiles and office equipment.

12. An annual allowance of 10 per cent for a combined utility's common property consisting primarily of automobiles and office equipment was approved, p. 18.

Depreciation, § 51 — Electric property.

13. An annual depreciation rate of 3 per cent for electric property was approved, p. 18.

Depreciation, § 56 — Gas utility.

14. A depreciation rate of 2.5 per cent for gas property exclusive of a transmission line was approved, p. 18.

Depreciation, § 56 — Gas transmission line.

15. An annual depreciation rate of 2 per cent for a gas transmission line was approved, p. 18.

Depreciation, § 82 — Water property.

16. A depreciation rate of 2 per cent for water property was approved, p. 18.

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Apportionment, § 9 — Management fee.

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20. The period for amortizing rate case expenses should depend upon the history of the company, the amount to be amortized, and the burden upon the consumer by reason of the charge, p. 20.

Expenses, § 92 — Rate case expense — Amortization.

21. A 10-year period for the amortization of rate case expenses was held to be reasonable, p. 20.

Return, § 16 — Right to earn.

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Rates, § 203 — Unit for rate making — Territorial divisions.

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Rates, § 640 — Procedure — Charges on extension — Settlement by conference.

24. Cases in which complaints are made against charges on rural extensions, when the amount of energy used by the consumer is very small, should be handled by conference with the Commission rate department rather than by directive orders, p. 21.

(ANDERSON, Commissioner, dissents.)

[July 27, 1936.]

INVESTIGATION of rates of a combined electric, gas, and water utility company; property value determined, depreciation rates fixed, and motion by city for separate determinations denied.

By the COMMISSION: On October 2, 1931, the Commission, on its own motion, instituted proceedings to determine the present fair value and proper operating charges of the Missouri Public Service Company. The Commission's engineering department was directed to make an inventory and appraisal of the company's property, and the accounting department was directed to audit the company's books and records for the purpose of furnishing information to this Commission that may be of use in the determination of the present fair value of the property and the operating revenues and expenses. At the time this order was issued there was pending before the Commission the complaint of J. E. Cole and C. C. Norman for reduced rates to consumers of electricity in the city of Nevada, filed on July 17, 1931 (Case No. 7704); and the complaint of the city of Trenton, filed on September 9, 1931, petitioning for reduced electrical rates in that city (Case No. 7777). Subsequent to the Commission's order, complaints were filed, respectively, by the city of Ridgeway (Case No. 7910), the city of Warsaw (Case No. 7975), the city of Clinton (Case No. 8223), and the city of Lincoln (Case No. 8298). A
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number of informal complaints were also filed by citizens of various cities served by the Missouri Public Service Company. On January 18, 1934, the Commission issued orders in Cases Nos. 7704, 7777, 7910, 7975, and 8298, and on April 27, 1934, the Commission issued its order in Case No. 8223, consolidating all of these cases with Case No. 7806.

The Commission's accountants' audit of the accounts was filed on July 29, 1935, and the Commission's engineers' appraisal of the property was filed on August 2, 1935. Hearings were held by the Commission *en banc* on November 6, 7, and 8, 1935, after notice of hearing had been given to all interested parties. At the hearings, the cities of Lincoln, Cole Camp, and Warsaw filed motions requesting the Commission to allocate and determine the amount of property used and useful in serving the respective communities and determine the operating expenses chargeable to the various communities in order to determine the reasonableness of the rates charged for electricity delivered to consumers in the respective towns. The Commission took the motions under advisement, and will pass on them in the instant case.

PUB. SERV. COM. OF MISSOURI v. MISSOURI PUB. SERV. CO.

The Missouri Public Service Company, hereinafter designated as "company," is a Missouri public utility corporation with general offices located in the Hout Building at Warrensburg, Missouri. The company is a subsidiary of the Inland Power & Light Corporation; the latter is a subsidiary of the Commonwealth Light & Power Company, which, in turn, is controlled by the Middlewest Utilities Company. The control of the company by the Inland Power & Light Corporation is exercised through ownership of its common stock. The Inland Power & Light Corporation and the Missouri Public Service Company are now undergoing reorganization in the Federal court, pursuant to § 77-B of the Bankruptcy Law.

The company owns and operates public utility properties located in 17 Missouri counties, 98 cities and towns, and the rural communities adjacent thereto, and serves 20,840 electric customers, 3,132 gas customers, and 2,843 water customers. The company also owns and operates a coal mine located in Henry county, outside the city limits of Clinton. The coal mine is used exclusively by the company's electric generating plants at Clinton and Pleasant Hill. No coal is sold to the general public. The company also owns and operates a wholesale ice business in Trenton, and merchandises electric appliances and kindred merchandise throughout its territory.

The electric properties of the company are segregated by the Commission's engineers into four power groups, each with its individual sources of power. The four groups with the towns served in each and the

sources of power are as follows: [List of towns omitted.]

All of the communities in this group are interconnected and served by transmission lines owned by the company. Part of the power for this group is generated at plants, either steam or gas engine operated, located at Clinton, Pleasant Hill, and Nevada, and the balance is purchased from the Ozark Utilities Company at Osceola, Missouri. The company also maintains an oil engine standby plant at Warrensburg, Missouri. [List of towns omitted.]

The communities in this group are interconnected and served by transmission lines owned by the company. Part of the power for this group is generated by an oil engine plant located at Trenton, Missouri, and the balance is purchased from the Missouri Power & Light Company, delivery being made at Trenton, Missouri. The company also maintains an oil engine standby plant located at Ridgeway, Missouri. [List of towns omitted.]

The communities in this group are interconnected and served by transmission lines owned by the company. Power for this group is purchased from the Ozark Utilities Company at a point near Lamar Junction, Missouri. [List of towns omitted.]

Power for these towns is purchased from a municipal plant located at Bethany, Missouri, and transmitted over the company's transmission lines to New Hampton and to Martinsville, Missouri.

The gas properties of the company consist of a water-gas plant serving the city of Chillicothe, a butane-air gas plant serving the city of Clinton,

MISSOURI PUBLIC SERVICE COMMISSION

a water-gas plant serving the city of Trenton, and a natural gas system serving the city of Nevada. The natural gas is purchased from the Eastern Kansas Pipeline Company (a subsidiary of the Missouri Public Service Company) and is metered at the Missouri-Kansas state line. The gas is then transmitted from the state line to Nevada over a transmission line which our engineers have designated as property of questionable ownership. Our accountants, in their report, include it as property of the Missouri Public Service Company. Evidence was submitted by the company, as will be shown later in this report, that this transmission line from the state line to the city of Nevada is owned by the company.

The water department consists of properties at Clinton where the company owns a series of deep wells and also uses the Grand river as a source of supply, and maintains a complete treating and purifying system; Nevada, where the company owns a series of deep wells which it uses as a source of supply; Osceola, where the company uses a deep well as a source of supply; and Pleasant Hill, where the company has an artificial lake formed by damming a small stream on the outskirts of the town. The company owns only the transmission, pumping, treating, and purifying facilities at Pleasant Hill, and sells the water at wholesale to the city of Pleasant Hill. The city distributes this water through a municipally owned distribution system.

The Commission's engineers set up the company-owned coal mine separately in their report, but recommended that the coal mine be considered as

part of the electric plants at Clinton and Pleasant Hill because the entire production of coal is used by these plants. The accountants in their report separated the coal operations from those of the balance of the company because all coal delivered to the power plants was billed to the company at the NRA code price in effect in that district and all electric energy delivered to the mine by the electric department was billed at the regular schedule of rates for this class of service on file with this Commission. The cost of coal, therefore, has been considered a part of the operating expenses of the electric plants involved. The coal mine was not in operation at the time of the hearing.

Corporate History

The Missouri Public Service Company was incorporated in Missouri on November 29, 1926, with its charter providing, among other things, that the company have the power to buy, own, lease, construct, or otherwise acquire public utility properties of all kinds and to engage in the ice and coal business. The authorized capital stock of the company was twenty shares of no par value. Subsequently, amendments were filed increasing the authorized capital stock to 80,000 shares, consisting of 40,000 shares of no par preferred stock, and 40,000 shares of no par common stock; and subsequent to that a further increase from 40,000 shares of preferred and 40,000 shares of common stock was made to 40,000 shares no par preferred, 2,000 shares of no par junior preferred, and 75,000 shares of no par common stock. On December 31, 1934, there were outstanding 18,875

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shares of the preferred stock, 1,315 shares of the junior preferred stock, and 59,970 shares of the common stock. The book value of the outstanding stock is \$4,990,656. The company also had outstanding on the above date first mortgage 5 per cent bonds with a par value of \$6,351,000. The total outstanding securities of the company had a book value of \$11,341,656.

The property of the company as it now exists is the result of acquisition by purchase of various properties and by additions, improvements, and extensions by the company in the distribution systems, transmission lines, and appurtenant substations. The companies that were acquired subsequent to May 27, 1927, the date on which the account books of the company were opened, are as follows:

West Missouri Power Company, which owned electric, gas, and water plants, and transmission and distribution systems serving 53 cities, towns, and suburban communities in Missouri, and a coal mine located near Clinton, Missouri.

Trenton Gas and Electric Company, which owned the electric, gas, and ice plants and distribution systems located in Trenton, Laredo, Spickard, and Tindall.

Peoples Gas and Electric Company, which owned the gas manufacturing plant and the distribution system in Chillicothe, Missouri.

Missouri Electric, Gas & Water Company, which owned and operated the electric distribution systems in Cainsville, Blythedale, Eagleville, Mill Grove, Modena, and Mt. Moriah, Missouri, and the interconnecting transmission lines.

New Hampton Electric Company, which owned the electric distribution system in New Hampton and the transmission line connecting New Hampton and Bethany.

Windsor Light & Power Company, which owned the electric distribution system in Windsor, and a generating plant that was not in use.

Galt Light & Power Company, which owned the electric distribution system in the city of Galt.

The part of the Ozark Utilities Company composed of the electric generating plants and distribution systems with the interconnecting transmission lines serving the towns of Bronaugh, Iantha, Irwin, Jerico Springs, Liberal, Milo, Moundville, Sheldon, Milford, and Hannon.

Ridgeway municipal plant.

Chula distribution system and transmission line.

Amsterdam distribution system.

Amoret distribution system.

Original Cost

The Commission's engineers did not make any study to determine the estimated investment in the properties of the company. The Commission's accountants in their report, designated Exhibit 5, show the balances on the company's books as representing the fixed capital investment in the company's various properties, and itemized the various arbitrary increases in the fixed capital accounts by reason of appraisals made of the various properties absorbed by the company. The Commission's accountants also introduced Exhibit 10, which is a summary of (1) the investment in the various properties recorded on the books of the companies absorbed, (2)

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the outlay in cash and notes by the company to purchase property, and (3) the verifiable expenditures by the various companies to construct and improve the various properties. This shows that the investments recorded on the books of the various companies amounted to \$748,352.47; that the outlay in cash and notes by the company to purchase property amounted to \$494,150.94, and that the outlay made by the various companies absorbed and the company to improve, extend, and reconstruct various properties, as determined from records that were verifiable, after deduction of retirements amounted to \$6,488,321.05. The total outlay to purchase, construct, or improve the properties to December 31, 1934, amounted to \$7,730,824.46. According to the testimony of the Commission's accountants, only the amount of \$748,352.47, the original investment shown on the books of the companies acquired by the company, are unverifiable. This amount, however, is less than 10 per cent of the total book value of the property after deduction of the arbitrary increases mentioned hereinbefore.

We are of the opinion, therefore, that the sum of \$7,730,824.46, though not representing the actual outlay for the original construction of the property, may be accepted as a fair indication of the original cost, and we will so treat this adjusted book figure in our determination of fair value. The company now being in the process of reorganization, we suggest that the company's fixed capital account be adjusted to reflect the above original investment in the property, thus exclud-

ing the arbitrary write-ups by reason of appraisals.

Cost of Reproduction

The Commission's engineers inventoried all the properties of the company as of November 30, 1933, and submitted their report in five volumes which have been marked Exhibit 1 in this case. The inventory of land was obtained from examination of all available records of the company together with a study of the files in the office of the recorder of deeds of each county in which the company owns land. The inventory of buildings, equipment foundations, basins, gas holders, overhead electric transmission and distribution lines, including transformers, street lighting equipment, and similar items, was made by field measurement and count, supplemented by information obtained from plans, contracts, specifications, agreements, and other data on file with the company. Items which could not readily be examined, such as underground electric conduits and cables, meters, gas and water mains and services, and similar equipment, were inventoried from company records.

The present fair market value of land included by the Commission's engineers in their appraisal was obtained through quotations from local real estate dealers, bankers, and individuals familiar with real estate values in the towns where the company's property is located. The amount included for transmission line easements was based on a study of the actual cost of easements for the 66,000-volt transmission line from Clinton to Pleasant Hill, a distance of about 75 miles. The original cost of all the easements

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was not obtainable from the company's records, and this method was used by the engineers to approximate the present value of the easements.

Material prices were based on purchase agreements which the company has with several manufacturers and on catalog list prices where no agreements were in force, giving consideration to special discounts available to the company. Other price information was obtained from quotations furnished by the manufacturers. The labor rates used in calculating the unit costs were those that would prevail in event of a reproduction of this property and were to some extent based on the wage scale that prevailed during the period of 1927 to 1930 when the company was engaged in considerable construction work. Buildings, basins, equipment foundations, and other structural items were priced by a building contractor who testified at the hearing as to the method of calculating the costs. Direct overheads were added to material costs to provide for the expense of the stores and purchasing department; and to labor costs to include the expense of a superintendent of construction, his assistants, and miscellaneous help, tool expense, miscellaneous construction expenses, and workmen's compensation, public liability and property damage insurance. All unit costs thus calculated are assumed to prevail on the date of appraisal.

The Commission's engineers estimated the cost of reproduction of the electric property used in public service as of November 30, 1933, to be \$5,216,547. To this should be added \$93,739, included by the Commission's engineers in the general over-

heads to provide for omissions and contingencies. This brings the total cost of reproduction to \$5,310,286 for all items exclusive of the other general overheads. The Commission's engineers estimated the reproduction cost of the gas property including the gas transmission line from the Kansas-Missouri line to Nevada to be \$550,903, to which should be added \$8,363 for omissions and contingencies, giving a total of \$559,266 for the entire gas property exclusive of the other general overheads. The estimated cost of reproduction of the water property, as shown in the Commission's engineers' report, is \$506,375, to which should be added \$8,131 for omissions and contingencies, giving a total of \$514,506. The Commission's engineers repriced the inventory to reflect material prices prevailing on September 24, 1935, to give weight to increases from the inventory date to the date of repricing. This was done by obtaining the relative prices on representative items and deriving an index to show the variations from November 30, 1933, to September 24, 1935. The adjusted estimates of the cost of reproduction were \$5,555,347 for the electric property, \$592,862 for the gas property, and \$537,567 for the water property. The calculations of the indexes and the various adjustments are shown in Commission's Exhibit 3.

An inventory and appraisal of the property, prepared by Day & Zimmermann, Inc., engineers, was submitted by the company. This was based on an inventory of the properties existing on May 31, 1935, and reflects material price levels and labor rates prevailing on or about that date.

The inventory was prepared in part

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We are of the opinion, therefore, that the sum of \$7,730,824.46, though not representing the actual outlay for the original construction of the property, may be accepted as a fair indication of the original cost, and we will so treat this adjusted book figure in our determination of fair value. The company now being in the process of reorganization, we suggest that the company's fixed capital account be adjusted to reflect the above original investment in the property, thus excluding the arbitrary write-ups by reason of appraisals.

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An inventory and appraisal of the property, prepared by Day & Zimmermann, Inc., engineers, was submitted by the company. This was based on an inventory of the properties existing on May 31, 1935, and reflects material price levels and labor rates prevailing on or about that date.

The inventory was prepared in part

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from office records and in part by field inspection. The testimony shows that the entire field inventory was made in five weeks. Quotations were obtained from manufacturers for such items as building materials, electric and gas production plant equipment, electric power transformers, cast iron and steel pipe, poles, conductors, cross-arms, and pole line hardware. Prices from the engineers' price data files were used for such items of equipment as switchboards, conduit, cable, and wiring devices. These prices were modified to reflect local conditions. Manufacturers' current list prices, to which were applied the discounts which the company enjoys with such manufacturers, were used in pricing electric and gas meters and line transformers.

The labor rates used in estimating the cost of construction were based on the wage scales prevailing in the territory served by the company. In developing the labor cost to build structures and install steam and gas production equipment, the company's engineers added 15 per cent of the direct labor costs to provide for indirect labor costs. For the installation of electrical equipment, this allowance was increased to 21 per cent. These percentages covered handling and storeroom expenses, small tools, construction equipment and plant, automobiles, trucks, foremen, inspectors, miscellaneous help, and workmen's compensation, public liability and property damage insurance. To the sum of material and labor cost estimates for each unit of property, for all accounts except land and general equipment, an additional allowance of 12 per cent was added to provide for

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field office expense and supervision.

The company's engineers' estimate of the cost of reproduction of the electric property is \$6,482,688, to which should be added \$16,207 representing the item of injuries and damages, included by the company's engineers with general overheads, giving a total of \$6,498,895. This sum does not include general overheads. The company's engineers' estimate of the cost of reproduction of the gas property is \$741,316, to which should be added \$1,853 for injuries and damages, giving a total of \$743,169. The addition of the sum of \$1,853 for injuries and damages is made for the same reason as in the electric property. The company's engineers' estimate of the cost of reproduction of the water property is \$638,774, to which should be added \$1,597 for injuries and damages, obtaining a total of \$640,371.

The Commission's engineers had originally separated the gas transmission line from the other gas property because of uncertainty of the ownership. The Commission's engineers estimated the cost of reproduction of the gas transmission line from the Missouri-Kansas line to the city of Nevada, including omissions and contingencies but exclusive of other general overheads, to be \$102,350 with prices as of November 30, 1933, and \$110,872 as of September 24, 1935. The company estimated the cost of reproduction of the transmission line to be \$118,758, to which should be added 0.5 per cent or \$590 to cover injuries and damages during construction. Since the company introduced sufficient information and evidence to show that the gas transmission line was the property of the company, we

shall include it with the gas property.

The company advised the Commission that there has been no material change in its properties since November 30, 1933, and filed a statement designated Exhibit 9, showing that the additions from December 1, 1933, to September 30, 1935, are practically balanced by the retirements during that period, and that there is no adjustment necessary in the inventory made by the Commission's engineers to bring it to the date of inventory made by the company's engineers. The estimates of the cost of reproduction made by the Commission's engineers as of September 24, 1935, are, therefore, comparable in price bases and quantities involved to the inventory and appraisal made by the company's engineers of property existing and price levels and labor rates prevailing on May 31, 1935.

The evidence shows that the major differences in the two appraisals of the electric property are to be found in the estimates of the cost of reproduction of poles, towers and fixtures, both for distribution and transmission purposes, and overhead conductors. The Commission's engineers' estimate of the cost of reproduction as of September 24, 1935, of poles, towers, and fixtures is \$993,853, whereas the company's estimate of the cost of reproduction of these items as of May 31, 1935, is \$1,619,476. The difference is \$625,623. The Commission's engineers estimated the cost of reproduction of overhead conductors to be \$985,650. The Commission's engineers segregated the underground conductors into a separate account, and estimated the cost of reproduction of this item to be \$10,399. The com-

pany's engineers estimated the cost of reproduction of all conductors to be \$1,104,037. The difference in the two estimates is \$107,988.

The differences in some of the other accounts, though not so large in the number of dollars, are considerable on a percentage basis. Thus, the company's engineers' estimate of the reproduction cost of line transformers and devices is 20 per cent greater than the Commission's engineers' estimate (approximately \$70,000 more) and the company's engineers' estimate of street lighting equipment is approximately 40 per cent greater than the Commission's engineers' estimate (\$28,000 more).

A comparison of the two appraisals of the gas property discloses that the company's engineers' estimate of mains is approximately \$110,000 more than the Commission's engineers' estimate as of September 24, 1935, and that the company's engineers' estimate of services is approximately \$30,000 more than the Commission's engineers' estimate. The difference in the other accounts is very small and need not be given any material consideration.

The major difference in the two appraisals of the water property is in the estimates of the cost of reproduction of the transmission and distribution mains, the company's engineers' estimate being approximately \$100,000 greater than that of the Commission's engineers.

[1] The testimony discloses that the Commission's engineers inventoried the property in considerable detail, taking measurements, for example, of the top sizes of poles in order to determine their proper classification, and

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that they also analyzed a considerable number of the company's construction records to determine performances and labor rates applicable to the reproduction of a property of this magnitude. In pricing various equipment including transformers, the Commission's engineers based their unit costs on quotations or actual purchase records of the equipment involved. The company's engineers did not make such precise measurements in inventorying poles and fixtures, and priced a number of items, such as transformers on the basis of the average cost of each size, irrespective of the manufacturer, and poles on the predominant size.

It is apparent from the record that the Commission's engineers made more detailed studies and analyses than were made by the company's engineers before pricing this property. The criticism may, perhaps, be made that the Commission's engineers were too meticulous in making the inventory of the property. However, this increased rather than decreased the accuracy in applying prices to the units of property. We are of the opinion, therefore, that greater weight should be given to the estimates made by the Commission's engineers, especially with reference to the reproduction cost of such items as poles, towers and fixtures, conductors and transformers in the electric property, and the installation of mains and services in the gas property, and the mains in the water property.

The Commission's engineers segregated into one group the property used in common by the entire system, consisting of office equipment, transportation equipment, and tools and im-

plements at Warrensburg. These have a reproduction cost of \$40,311. The engineers suggested that these be apportioned to the various departments on the basis of the Commission's accountants' distribution of general expenses. The percentages are as follows:

<i>Electric Department</i>	<i>Per cent</i>
Power group No. 1	61.001
Power group No. 2	7.784
Power group No. 3	1.477
Power group No. 4356
<i>Gas Department</i>	
Chillicothe gas	2.410
Clinton gas	1.009
Nevada gas767
Trenton gas	3.266
<i>Water department</i>	
Clinton water	2.668
Nevada water	2.221
Osceola water337
Pleasant Hill water438
<i>Coal Mine</i>	9.758
<i>Merchandise and Ice Department</i>	6.508
Total	100.000

The company's engineers included these items in their estimates of the cost of reproduction of the various properties. The allocated portions are, therefore, part of the above estimates of the company's engineers.

Taking into consideration all of the evidence before us we are of the opinion that a reasonable cost of reproduction of the electric property is \$5,800,000; of the gas property, \$625,000; and of the water property, \$575,000. This includes only the property used and useful on September 30, 1935 in serving the consumers.

[2] The coal mine has not been considered as part of the used and useful electric property because it was classified as nonused in public service by the company's engineers, and the Commission's accountants, in arriving at the cost of production of electricity, included coal purchased by the electric

department from the coal mine at market prices. The coal mine can, therefore, be considered as a separate enterprise producing and selling coal to the electric department.

General Overheads

The Commission's engineers submitted Exhibit 2 showing the application of general overheads to the estimate of the cost of reproduction and the reproduction less depreciation of the various properties. The company's engineers included these estimates in Exhibit 8.

The Commission's engineers estimated that 2.5 per cent of the reproduction cost of the property exclusive of land, easements, and general equipment would be adequate to cover preliminary organization, legal, administrative, and miscellaneous expenses. They also assumed that there would be no deduction from this amount in arriving at the cost of reproduction less depreciation, on the theory that these expenses are related more to the corporate structure than to the physical property, and, therefore, would not be subject to depreciation with the physical property, but should be considered undepreciable in character as long as the property exists. The company's engineers included 0.5 per cent for organization, 0.5 per cent for law expenditures during construction, and 2 per cent for miscellaneous construction expenditures. These percentages were applied to all of the property including land and general equipment. The company's engineers applied these percentages to the estimate of reproduction less depreciation, thus obtaining a deduction for depreciation on this intangible element of cost.

[3] The Commission has allowed, in recent cases involving electric properties, 2 per cent for preliminary organization, legal, and miscellaneous expenses. We are of the opinion that an allowance of 2.5 per cent for preliminary organization, legal, administrative, and miscellaneous expenses is adequate and gives sufficient consideration to the fact that the company's properties are spread out over a considerable area.

[4] The allowance for preliminary organization, legal, administrative, and miscellaneous expenses should be applied to the cost of reproduction of the property exclusive of land and easements and general equipment. Applying this percentage to the various figures we obtain the allowance of \$140,000 for the electric properties, \$15,000 for the gas properties, and \$14,000 for the water properties for this item of undistributed cost.

[5] The Commission's engineers included 5 per cent on all items except land, easements, and general equipment for engineering and superintendence during construction. The company's engineers included 4 per cent on all items, including land and general equipment, but indicated that this did not provide for detailed plans, working drawings, and field supervision which were included in the primary accounts. Since we gave greater weight to the Commission's engineers' estimate of the cost of reproduction of the various items of property, we are of the opinion that their recommendation of 5 per cent should be used rather than the lower recommendation of 4 per cent made by the company's engineers. Applying this

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percentage to the cost of reproduction set out hereinbefore as our finding, less the estimate of the present fair value of the land and easements and the cost of reproduction of general equipment, we find that the allowance for engineering and superintendence should be \$280,000 for the electric property, \$30,000 for the gas property, and \$28,000 for the water property.

[6] The Commission's engineers included 0.5 per cent on all items except easements and general equipment for taxes during construction. This percentage is a judgment figure, and is based on findings made by this Commission in similar properties. The company's engineers included 1 per cent on all items of property.

The amount of taxes which a company would theoretically have to pay during the reproduction of a property of this magnitude can neither be calculated nor accurately estimated. In the actual construction of a property, taxes during construction are not always paid, and our engineers have found many cases where no taxes were paid during construction. We are of the opinion, therefore, that an allowance of 0.5 per cent on all items except easements and general equipment is ample for this undistributed construction cost. Applying this percentage to our findings of the cost of reproduction of the properties, we find that an ample allowance for taxes during construction is \$28,000 for the electric property, \$3,000 for the gas property, and \$3,000 for the water property.

In our finding of the cost of reproduction of the various properties exclusive of general overheads, but in-

clusive of direct labor and material overheads, we have added allowances for omissions and contingencies and for injuries and damages during construction. We shall, therefore, make no additional allowances for these items in our treatment of the general overheads.

[7, 8] The Commission's engineers assumed a construction period of two years for the electric property, and seven months each for the gas and water properties. Interest was allowed at the rate of 6 per cent on the total present market value of land and easements, and on one half of the reproduction cost of all other items except general equipment but including other general overheads for the entire construction period. This is based on the theory that all construction expenditures with the exception of those made for land and easements would be made at a uniform rate during the entire construction program. The company's engineers assumed a construction period of one and one-half years for the entire property and allowed interest at the rate of 6 per cent for this entire period on one-half the total of all accounts plus all overhead allowances. This resulted in an interest charge of 4.5 per cent on the reproduction cost of all items plus the general overhead costs applicable to them.

We are of the opinion that the various properties should be treated as one unit for construction purposes, and that a construction period of one and one-half years for the property as a whole is sufficient and that an interest rate of 6 per cent is reasonable. We are of the further opinion that, since

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a number of the parcels of land involved are small and could reasonably be purchased at different times during the construction period, the interest calculation should not be on the theory that all land is purchased at the beginning of the construction period. We shall, therefore, include for interest during construction 4.5 per cent on all items exclusive of general equipment since these, in our opinion, may reasonably be purchased at the end of the construction period, and will include in this calculation all general overheads hereinbefore allowed. This results in an allowance of \$282,000 for interest on the electric property, \$29,000 on the gas property, and \$28,000 on the water property. We shall consider these amounts in arriving at the fair value of the properties.

Reproduction Less Depreciation

The Commission's and company's engineers inspected the properties during the progress of the field inventory, and made estimates of the accrued depreciation, taking into consideration the field inspection, studies of the operating records, and the existing obsolescence and inadequacy in the property. The estimates of the cost of reproduction less accrued depreciation as set up in the respective reports were obtained by applying the percentages to the various accounts reflecting the condition of the properties. The engineers did not determine an over-all percentage applicable to the entire property.

A comparison of the calculated over-all percentages obtained by dividing the cost of reproduction new less depreciation estimates by the cost

of reproduction new indicates the following computed over-all percentages:

Property	Commission's Engineers' Percentage	Company's Engineers' Percentage
Electric property	91.76	90.42
Gas property	85.17	81.34
Water property	89.71	88.69

The higher percentages obtained by comparing the estimates of the cost of reproduction less depreciation with the cost of reproduction shown in the Commission's engineers' appraisal may be attributed in part to the fact that the Commission's engineers made their study of the property about two years prior to the time the company's engineers made their inspection, and in part to the differences in judgment. Considering all of the evidence before us we are of the opinion that the following percentages properly reflect the condition of the property as of September, 1935:

Electric property	91%
Gas property	83%
Water property	89%

[9] We have mentioned hereinbefore in this report that the Commission's engineers did not make any deduction for accrued depreciation in the estimate of preliminary organization, legal, administrative, and miscellaneous expenses whereas the company's engineers did make a deduction for this. It has been the practice of the Commission in recent cases to assume that the preliminary organization and legal expenses are related more to the corporate structure than to the physical property, and, therefore, should not be depreciated. Administrative and miscellaneous expenses, however, are related to the physical property,

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and should be depreciated. The amount included, however, is not separable, and we will, therefore, treat it in its entirety, and will make no deduction for depreciation.

Cost of Financing

[10] The company's engineers included 6 per cent of the cost of reproduction of the property to provide for the cost of financing the project, which includes such items as discounts on stocks, bonds, and other securities, as well as the costs incident to negotiating loans. This Commission has, in the past, rejected the cost of financing as an amount to be properly included in estimates of reproduction cost of a property. The supreme court of Missouri has followed the rule that the cost of financing, brokerage charge, bond discount, or any cost of obtaining money is not material in arriving at the reproduction cost estimates. Any consideration of the cost of money is permissible only in estimating the investment or original cost of the property.

The policy of this Commission and the rule of the Missouri supreme court is set forth in the case of *State ex rel. St. Louis v. Public Service Commission* (1930) 326 Mo. 751, P.U.R. 1931B, 448, 461, 34 S. W. (2d) 507, 515, in these words:

"This Commission has expressed its position relative to costs and financing in a number of cases. Bond discount and commissions, in so far as they are a part of interest during construction, are properly chargeable to capital account, but beyond that, the cost of financing, or of assembling capital

should not be included in a valuation for rate-making purposes."

The supreme court had previously ruled to the same effect in the case of *State ex rel. Capital City Water Co. v. Public Service Commission* (1923) 298 Mo. 524, 547, 252 S. W. 446, 452, wherein the court had approved the action of this Commission in disallowing brokerage, either in the borrowing of money or in the sale of stock or in the issue of bonds. The court stated as follows:

"In disallowing a like item in *Galveston Electric Co. v. Galveston*, 258 U. S. 388, 66 L. ed. 678, P.U.R. 1922D, 159, 42 S. Ct. 351, the Supreme Court of the United States through Justice Brandeis said: 'If base value were to be fixed by the money expended, brokerage fees actually paid might with propriety be included, as are taxes paid pending construction. But as the base value considered is the present value, that value must be measured by money; and the customary cost of obtaining money is immaterial. We cannot say that the court erred in refusing to include in base value an allowance for hypothetical brokers' fees.'"

More recently the Supreme Court of the United States sustained the Railroad Commission of California in rejecting the cost of financing. The court stated "that the items included in the company's estimate for 'cost of financing, \$5,921,470' and 'promoter's remuneration, \$2,500,000,' were too conjectural to be allowed." *Los Angeles Gas & E. Corp. v. California R. Commission*, 289 U. S. 287, 77 L. ed. 1180, P.U.R.1933C, 229, 53 S. Ct.

637. We are, therefore, of the opinion that this allowance for the cost of financing included by the company's engineers should be rejected.

Working Capital

The Commission's engineers checked the perpetual inventory kept by the company of the materials and supplies on hand, and determined the average amount shown during the last five years to determine the amount necessary for the operation of this company. Based on these studies, the Commission's engineers included in their appraisal the following amounts for materials and supplies: [Table omitted.]

The company's engineers made no recommendation of the amount of materials and supplies necessary for the operation of this company. We shall, therefore, accept the Commission's engineers' recommendation.

The Commission's accountants made a study of the company's operating expenses to determine the amount of cash working capital necessary for the operation of the various properties. Based on their studies the accountants recommended the following amounts: [Table omitted.]

The company's engineers made no recommendation of the amount of cash working capital necessary to operate this property. The Commission will, therefore, accept the recommendations of its accountants on this item.

Going Concern Value

[11] The Commission's engineers made no estimate of the going concern

value of this company. The company's engineers stated that although the elements of going concern value do not exist in this property to as high a degree as might be desired there was, in their opinion, enough of the elements present to justify an allowance of \$400,000 for this intangible item. The record is replete with evidence relating to the character of the physical plant, the management and personnel of this company, the rates being charged by this utility for its services, and its operating status. We will give consideration to these elements of value in arriving at the fair value of the plant. We do not see any reason, however, for making a separate finding of going concern value.

Additions and Betterments

The company filed a statement designated Exhibit 9 showing the additions and retirements to the property accounts from December 1, 1933, to September 30, 1935. This shows gross additions of \$173,148, and net retirements of \$175,840. We will, therefore, make no adjustments because of additions and retirements.

Fair Value

We have given careful consideration to the historical or original cost of the property in so far as it was ascertainable, the market value of land, the cost of reproduction and cost of reproduction less depreciation of the various properties used and useful in serving the consumers of the company, the proper allowance for general overheads, cash working capital, materials and supplies, the probable fu-

MISSOURI PUBLIC SERVICE COMMISSION

ture price trend, and all intangible elements of value inherent in these properties, treated as a going concern with business attached, necessary records and trained personnel, and we are of the opinion that the fair value of each property is as follows:

Electric property	\$6,300,000
Gas property	600,000
Water property	600,000

Annual Retirement or Depreciation Reserve

[12-17] The Commission's accountants found that the company had a credit balance in its retirement or depreciation reserve on December 31, 1934, of \$509,338.24. This reserve is to be available for all of the company's properties, *i. e.*, electric, gas, water, coal, and ice.

The Commission's engineers recommended that the company be permitted to set aside annually out of its operating expenses 10 per cent of the reproduction cost of the system's common property consisting primarily of automobiles and office equipment, 3.0 per cent of the electric property, 2.5 per cent of the gas property exclusive of the Nevada gas transmission line, 2.0 per cent of the gas transmission line, and 2.0 per cent of the water property. These percentages are all based on the reproduction cost of the depreciable property. The amounts

recommended by the Commission's engineers are as follows:

System common property	\$4,031
Electric property	176,043
Gas property (exclusive of transmission line)	12,142
Gas transmission line	2,104
Water property	10,965

It appears to us that the percentages recommended by our engineers are reasonable, but that they should be applied to our finding of reproduction cost, including general overheads but excluding land and easements. We are of the opinion that the company should set aside annually when earned, as a retirement or depreciation reserve the sum of \$190,000 for the electric property, \$17,000 for the gas property, and \$13,000 for the water property, plus 3.0 per cent of the cost of net additions to the electric property, 2.5 per cent of the cost of net additions to the gas property, and 2.0 per cent of the cost of net additions to the water property, subsequent to September, 1935.

Operating Revenues and Expenses

The Commission's accountants made an audit of the company's operating revenues and expenses for the year ended December 31, 1934, and made certain adjustments. The adjusted figures for the year are shown in Commission's Exhibit 5, and are as follows:

PUB. SERV. COM. OF MISSOURI v. MISSOURI PUB. SERV. CO.

	Operating Revenues	Operating Expenses*	Net Available for Depreciation and Return
<i>Electric Department</i>			
Power Group No. 1	\$941,631.87	\$518,501.24	\$423,130.63
Power Group No. 2	178,769.34	111,981.73	66,787.61
Power Group No. 3	30,251.86	23,804.60	6,447.26
Power Group No. 4	6,385.03	5,205.74	1,179.29
Total	\$1,157,038.10	\$659,493.31	\$497,544.79
<i>Gas Department</i>			
Clinton	\$8,983.65	\$7,596.08	\$1,387.57
Nevada	38,949.07	38,553.31	395.76
Trenton	24,612.97	23,245.00	1,367.97
Chillicothe	22,780.82	17,692.23	5,088.59
Total	\$95,326.51	\$87,086.62	\$8,239.89
<i>Water Department</i>			
Clinton	\$33,156.45	\$20,394.63	\$12,761.82
Osceola	5,528.56	3,267.96	2,260.60
Nevada	35,934.59	17,520.78	18,413.81
Pleasant Hill	2,606.77	3,032.45	425.68**
Total	\$77,226.37	\$44,215.82	\$33,010.55

* Exclusive of depreciation. ** Indicates deficit.

Management fee paid to Middle West Utilities Company (\$9,360.11).

[18, 19] The company objected to the elimination from operating expenses of the management fee paid by the company to the Middle West Utilities Company. The amount paid for the year 1934 was \$9,360.11. The Commission's accountants eliminated this sum because there were no details in the records of the company showing the basis for the charge or the cost of this supervisory service.

The company admitted that it was practically impossible to show the cost of rendering service to the company because the Middle West Utilities Company rendered similar service to over one hundred utility corporations in perhaps twenty states. Evidence, however, was introduced by the company to show the nature of the services rendered and the estimated measurable savings accruing to the company.

It was also shown that the company was being operated under the supervision of the Federal court, the company being in bankruptcy proceedings while this charge was being paid.

The Commission has not in the past allowed charges of this nature unless the cost of the service to the holding company was shown, and that the holding company made no profit on the rendition of this service. However, the fact that the court allowed the payments prompts us to allow this fee. The amount should, however, be divided between the various departments, including the coal and ice departments. No basis for division was suggested. We are of the opinion, however, that an apportionment on the basis of operating expenses, exclusive of the annual depreciation requirement, is reasonable, and will not result in burdening one department at the expense of another department. We shall, therefore, add the following

MISSOURI PUBLIC SERVICE COMMISSION

amounts to the operating expenses of the various departments:

Electric Department

Group No. 1	\$5,530.30
Group No. 2	1,194.39
Group No. 3	253.90
Group No. 4	55.52

Gas Department

Clinton	81.02
Nevada	411.21
Trenton	247.93
Chillicothe	188.70

Water Department

Clinton	217.53
Osceola	34.86
Nevada	186.88
Pleasant Hill	32.34

Coal Department

.....	857.33
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Ice Department

.....	68.20
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Total \$9,360.11

Electric Department

Power Group No. 1	\$3,952.52
Power Group No. 2	4,765.93

Gas Department

Trenton	2,797.76
Chillicothe	2,177.76

Total \$13,693.97

Since the date of hearing the company has filed schedules reducing the rates in the following communities: [Table omitted.]

The reductions set out above should be considered in determining the net revenues available for depreciation and return. The amounts available after the adjustments have been made are as follows: [Table omitted.]

[22] The amounts which we have directed the company to set aside annually into a retirement or depreciation reserve should be deducted from the above sums. This shows that the electric department is earning \$274,341 for return, or 4.35 per cent on the fair value of the electric properties; that the gas property has failed to earn its retirement reserve requirement; and that the water department is earning \$20,000 for return, or 3.33 per cent on the fair value of the water properties. These are below the rate of return which this Commission has been allowing in recent cases. We cannot, therefore, require any downward adjustment in rates at this time.

Amortization of rate case expenses.

[20, 21] The company objected to the use of a 10-year period for the amortization of the rate case expenses, contending that a 5-year period should have been used. The total amount to be amortized is \$100,678.23. The period of amortization should depend upon the history of the company, the amount to be amortized, and the burden upon the consumer by reason of this charge. We are of the opinion that a 10-year basis for the amortization of the rate case expenses is reasonable and we should not disturb the adjustment made by our accountants.

Rate reductions.

The Commission's accountants reported that rate reductions made by the company during the period covered by the audit would have reduced operating revenues by the estimated amount of \$13,693.97 if the reduced rates had been in effect the entire year. These reductions are distributed as follows:

Necessity of Property Allocation

[23] We have before us a number of formal complaints which have been consolidated with the instant case, as well as the motions of the cities of Cole Camp, Lincoln, and Warsaw, requesting the Commission to determine the value of the property used and

PUB. SERV. COM. OF MISSOURI v. MISSOURI PUB. SERV. CO.

useful in serving the consumers of the particular towns and the reasonableness of the rates charged. Our findings in the instant case indicate that the company as a whole is not earning more than a fair return upon the property used and useful in serving the public.

We are also advised by our rate department that the company has instituted a program of standardizing the rates over its system in order to obtain uniform rates in contiguous territories. The list of rate reductions set out hereinbefore in this report indicates that the company is actively engaged in adjusting its rates in order to obtain this uniformity. The character of the service furnished in the various towns is similar, and there is no evidence of any special conditions existing in these towns calling for different rates. We think it inadvisable, therefore, to single out certain communities and test the rates in those communities. Nor do we think it advisable to issue any directive orders to the company in reference to the adjustment of rates which has been going on to obtain uniformity. It is our opinion that this can better be accomplished through informal conferences with our rate department. We shall, therefore, deny the motions of the cities of Cole Camp, Lincoln, and Warsaw, and will not segregate the property at this time to determine the amount used and useful in each community. Incidentally, we should look at the practicability of such a step. Our audit does not show the expenses by towns, nor do we have sufficient data relative to the demands by the various towns to make a proper allocation of

common generating and transmission property.

[24] We also have before us the complaints of three rural consumers in reference to the charges made by the company for the service rendered. These charges consist of a carrying charge and an energy charge. We are aware that in some cases, where long extensions are made to serve rural consumers, it becomes necessary for the company to charge a specific sum that will bring a return on the investment in the power line, and will pay the maintenance and depreciation charges of the line. In cases of this character, if the amount of energy used by the consumer is very small, the cost when based on the kilowatt hours consumed becomes extremely high. Cases of this nature should, however, in our opinion, be handled by conference with our rate department rather than by directive orders. We, therefore, will refer this matter to our rate department, with the suggestion that it be handled directly with the consumers and the company.

Hargus, Chairman, and Boyer, Nortoni, and Ferguson, Commissioners, concur; Anderson, Commissioner, dissents in separate opinion.

ANDERSON, Commissioner, dissenting: Anderson dissents for the reasons that there cannot be a rate reduction in this matter, because the defendant company has made several rate reductions since this proceeding was initiated, and also the Commission has authorized a bond issue recently, and the finding of fair value and a failure to fix a legal rate of return can only be classed as a nuga-

MISSOURI PUBLIC SERVICE COMMISSION

tory act, because the complaint filed on behalf of the various municipalities has been satisfied by the rate reduction and the principles announced in Case No. 5550 (13 P.U.R.(N.S.) 478) the Empire District Electric Company, by the Commission should have been followed in this case as the majority opinion does not overrule the cardinal principle set up by the Commission in that cause.

ORDER

This case having been duly heard and submitted, and the Commission, on the date hereof, having made and filed its report containing its findings of facts and conclusions thereon, which report is made a part hereof; now after due deliberation, it is

Ordered: 1. That the Commission finds as a fact that the fair value of the properties of the Missouri Public Service Company as of September 30, 1935, used and useful in serving the company's consumers, considering these properties integrated into one going concern, with all elements of value, tangible and intangible, is as follows:

Electric property	\$6,300,000
Gas property	600,000
Water property	600,000

Ordered: 2. That the company be and is hereby directed to set aside annually from the operating revenues

of the electric department the sum of \$190,000 plus 3.0 per cent of the cost of the net additions less retirements subsequent to September 30, 1935; that the company set aside annually from the operating revenues of the gas department, when earned, the sum of \$17,000 plus 2.5 per cent of the cost of additions less retirements subsequent to September 30, 1935; and that the company set aside annually from the operating revenues of the water department the sum of \$13,000 plus 2.0 per cent of the cost of additions less retirements subsequent to September 30, 1935, these sums to be held in a depreciation or a retirement reserve fund as specified in the Commission's Classification of Accounts.

Ordered: 3. That the motions of the cities of Cole Camp, Lincoln, and Warsaw be and are hereby denied for the reasons set out hereinbefore in the report.

Ordered: 4. That this order shall take effect August 25, 1936, and that the secretary of the Commission forthwith serve certified copy of same on all parties interested herein, and that each of said parties shall notify the Commission before the effective date of this order, in the manner prescribed by § 5145 of the Public Service Commission Law, whether the terms of said order are accepted and will be obeyed.

North Penn Gas Company
v.
Godfrey L. Cabot, Incorporated

[Complaint Docket No. 11064.]

Public utilities, § 24 — Test of status — Contracts.

1. Neither the fact that written contracts were made covering natural gas service nor the fact that only three such contracts were made with consumers within the state proves the service private, p. 24.

Public utilities, § 14 — What constitutes — Solicitation — Signing contracts — Laying pipes.

2. A corporation which has obtained a certificate of authority under the Business Corporation Law, permitting it to transport gas for use in its own operations and to sell gas at the point of production under private contract and at wholesale only, engages in operation as a public service company when it solicits customers, signs contracts for service, and lays pipe lines for such service, although such actions are alleged to be preliminary to the organization of a public service company, p. 24.

[June 23, 1936.]

COMPLAINT against alleged operation of natural gas public utility without a certificate of convenience and necessity; complaint sustained and company ordered to cease from transporting and selling gas without authority.

By the COMMISSION: This complaint alleges that Godfrey L. Cabot, Inc., engaged in the supply of natural gas to the public in McKean county and Potter county, Pennsylvania, without first having obtained the requisite approval of this Commission. Interstate operations of the respondent are not involved. By stipulation, the record at Application Docket 34259, Folders 1 and 2 (15 P.U.R.(N.S.) —, will be considered as a part of the record in this proceeding.

The material facts are not in dis-

pute. The respondent is a public utility incorporated in Massachusetts, which began business in northern Pennsylvania in the year 1934. In that year it leased some 19,000 acres in the natural gas territory, and instituted an investigation of possible markets for gas. In the course of this investigation, which continued until January, 1936, the record shows that twenty-one named Pennsylvania consumers, including five gas companies, and five New York consumers including two gas companies, were interviewed with a view of obtaining

PENNSYLVANIA PUBLIC SERVICE COMMISSION

their business. Approximately twenty large oil producers, and about thirty individual producers were also solicited. Actual contracts were solicited for the supply of gas in Pennsylvania to Genesee Chemical Company, Hanley Brick Company, and Kendall Refining Company. The Hanley contract was made January 9, 1936, after the filing of this complaint, and its fulfillment was made contingent upon obtaining certificates of public convenience. No application for such a certificate has been filed by Godfrey L. Cabot, Inc., but it apparently realized the necessity for Commission authorization of the service covered by the contract. Gas was to be delivered under the first two contracts upon completion of the necessary pipe lines. Work on the lines was begun and vigorously proceeded with until operations were enjoined by the Potter county court of common pleas upon the filing of this complaint.

[1, 2] The respondent, admittedly a public utility, obtained a certificate of authority under the Business Corporation Law of May 5, 1933, P. L. 364, permitting the transportation of gas for use in its own operations, and the sale of gas at the point of production under private contract and at wholesale only. It proceeded to lease and purchase production acreage, drilled wells, solicited customers, and contracted to supply gas. It also laid pipe lines for the purpose of delivering gas to its customers both within and without the state. Respondent suggests that it did not contract as a public service company, but

neither the fact that written contracts were made covering the service, nor the fact that only three such contracts were made with Pennsylvania consumers proves the service private.

The principal defense of the respondent is in the nature of a plea of confession and avoidance. It argues that the solicitation of customers, the signing of contracts, and the laying of pipe lines were all preliminary to the organization of a public service company for which a certificate of public convenience would be obtained, and to which the contracts and pipe lines would be transferred. Implicit in this argument is the admission that the operations of the respondent were those of a public service company, and required the authorization of this Commission.

A review of the testimony leads us to the conclusion and we find that Godfrey L. Cabot, Inc., has operated as a public service company in Pennsylvania without first having obtained a certificate of public convenience as required by The Public Service Company Law; therefore,

Now, to wit, June 23, 1936, it is *ordered*: That the complaint be and is hereby sustained.

It is *further ordered*: That Godfrey L. Cabot, Inc., respondent, its agents and employees, forthwith cease and desist from the transportation and sale of natural gas to the public in the commonwealth of Pennsylvania, until it shall have obtained a certificate of public convenience authorizing such transportation or sale.

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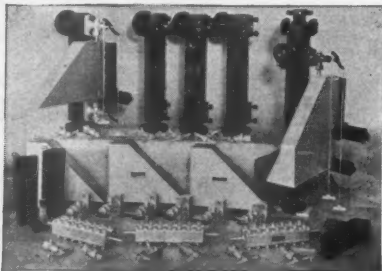
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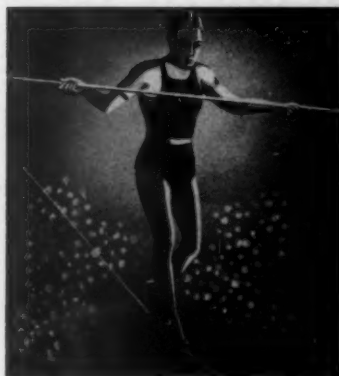
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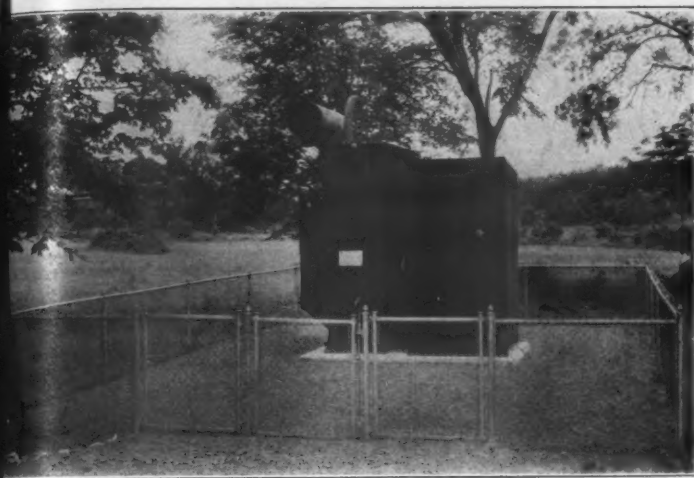
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BEFORE

The Northtown store of Wieboldt Stores, Inc., Chicago, showing the lighting from the old style glaring direct lighting fixtures

Every live up-to-date merchant recognizes that good lighting is his most effective salesman. It is a well known axiom that "Merchandise well displayed is half sold." With this thought in mind, thousands of merchants all over the country are modernizing their stores and good illumination should be their first step in this process.

AFTER

The same store after installing Lustroliers No. 5100. Note the absence of glare and sharp shadows, but in their place soft evenly diffused illumination

Permaflector Lustrolier No. 5100 is the answer to the modern merchant's illumination problem. Predominantly an indirect lighting fixture, it also has a low direct lighting component transmitted through large stippled heat resisting glass roundel in the bottom member.

Equipped for use with 750, 1000, or 1500 watt lamp,

Lustrolier No. 5100 offers the public utility a lighting fixture which not only gets business, but builds up the lighting load. Recommend Lustrolier No. 5100 for the modernization of department stores.



PITTSBURGH REFLECTOR COMPANY

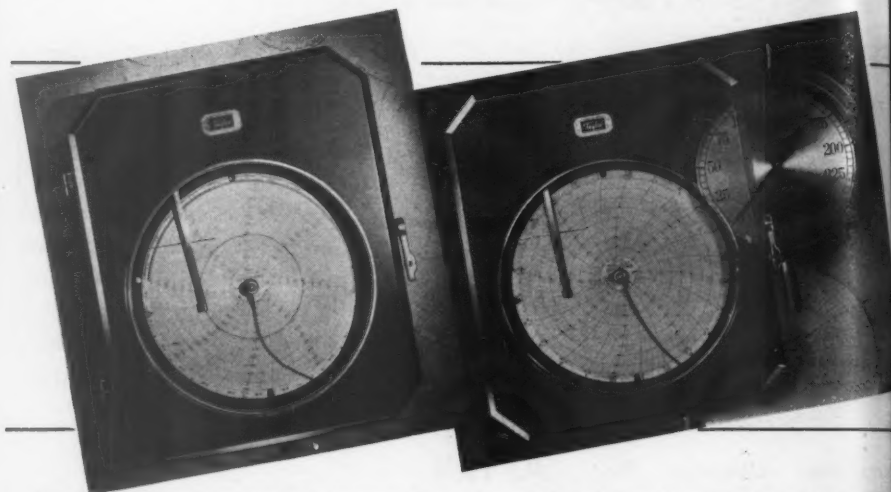
OLIVER BUILDING



PITTSBURGH, PA.

LET POWER

write its autobiography



TAYLOR RECORDING THERMOMETER—In appearance, design and construction the highest type of modern recorder available today. Three types—Mercury-, Gas-, and Vapor-Actuated. Mercury type uses Taylor Accuratus Tubing, designed to compensate for temperature changes through which tubing passes and to assure correct bulb temperature readings. Dust-proof and moisture-proof cases for face-, or flush-mounting. Many styles of standard bulb assemblies are available to accommodate all types of apparatus.

TAYLOR RECORDING PRESSURE GAUGES—As fine and accurate an instrument as its brother Recorder of temperature. With latest refinements and improvements in design and construction. A pressure gauge of the highest type—long-lasting, efficient and economical in operation. In a rust-proof die-cast case which protects the internal mechanism against moisture and dust. For face-, or flush-mounting. Shown dimly behind the recorder is the Taylor Dial Gauge, outstanding among indicating instruments. Easy to read...durable...accurate.

Study its accurate record as written by the pens of Taylor Recording Thermometers and Pressure Gauges

WHO ever thought of power writing its life history? But it does—in terms of temperature and pressure, with the pens of recording thermometers and gauges. The chart chapters are vital records for every power plant. But they must be accurate records—reliable records—the truth and nothing but the truth.

Through the medium of Taylor Recording Thermometers and Pressure Gauges, power plants get precise and accurate records today. These instruments are designed from beginning to end to meet the most exacting requirements in connection with the production of power.

They are built to be accurate—and to give exceptionally long and economical service. (Their charts are printed on specially developed paper to eliminate reaction to atmospheric changes and to provide the ideal writing surface.)

Shown above are three types of modern Taylor Recorders designed for power plant use. A Taylor Recording Thermometer, a Recording Pressure Gauge, and a combined Recording Thermometer and Pressure Gauge, a necessity for superheated steam lines. For more complete information regarding these instruments, write for Catalog 68J

on Temperature Recorders and Catalog 68JF on Pressure Recorders. For more direct data on these and any other Taylor Instrument Power Plants, ask a Taylor Representative to cover the ground where you. For Catalogs or a Taylor Representative, address Taylor Instrument Companies, Rochester, N. Y. or Toronto, Canada. Manufacturing in Great Britain—Short & Massey Ltd., London, England.

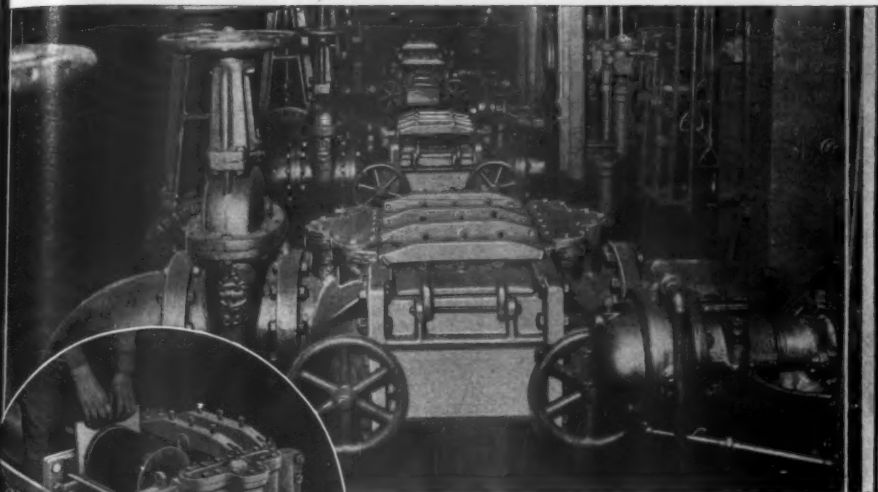
Taylor

Indicating Recording Controlling

TEMPERATURE, PRESSURE, FLOW INSTRUMENTS

TWIN TRAINERS

provide clear water for Hudson Avenue Station



IN THIS FAMOUS PLANT, as in hundreds of others, large and small, Twin Strainers are giving absolutely non-stop service, providing complete protection.

When a Twin Strainer basket becomes fouled, a few turns of a hand-wheel diverts the flow through the alternate basket. Then, when convenient, a few minutes suffice to remove the cover, lift out the fouled basket, dump it and replace. Meanwhile the alternate basket is in service and there is no interruption to the flow.

Twin Strainers can be installed anywhere in the line, in almost any position. They are invaluable for water, oil (lubricating or fuel) or any liquid sufficiently fluid to pass the basket mesh. They are made in several types and in all sizes; large ones may be motor-operated.

We also make Single Strainers, for use where constant flow is not essential. Write for the bulletin covering the easy solution to all kinds of straining problems. Ask for Bulletin A-6.

Cleaning Twin Strainers does not interrupt their service. One side is working, the other side is cut out and available for cleaning. A few turns of the hand-wheels direct the flow from one chamber to the other. Cleaning is easy, and quick. Twin Strainers may be installed in the pipe line, wherever convenient and accessible. Types for all services. Sizes 2" to 42". Elliott single strainers are used in lines permitting shutdowns for cleaning.

ELLIOTT COMPANY

PITTSBURGH, PA.



Accessories Department: JEANNETTE, PA.

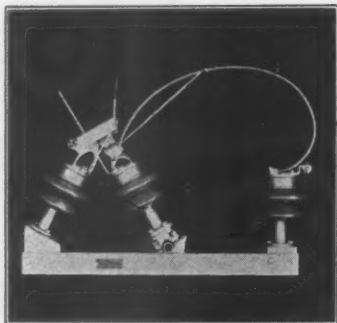
District Offices in Principal Cities

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RURAL LINE SWITCHES

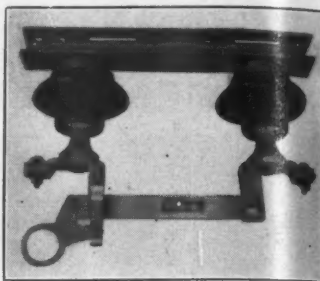
(Single Pole—Three Pole)

SWITCHING equipment must be designed to meet certain practical limitations. Service requirements must be weighed against cost. Under certain conditions more consideration must be given to one than to other factors.



"RF-35" DISCONNECT

See Bulletin 35-B
(7.5 to 34.5 K.V.)



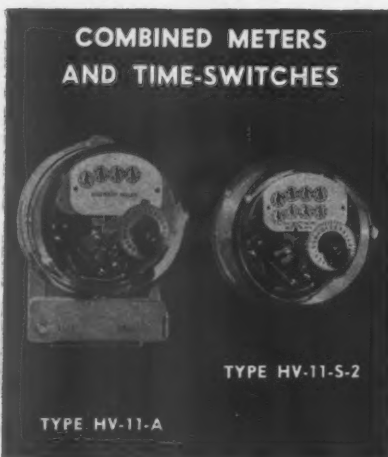
"RFB-3" DISCONNECT

Switches especially designed to meet the demand of that class of service which does not require ratings exceeding 400 amperes, where economy must be given first consideration—but not to the extent of impairing service.

Delta-Star  **Electric Co.**

2400 BLOCK, FULTON STREET, CHICAGO, ILL.

COMBINED METERS AND TIME-SWITCHES



SANGAMO TYPE HV METER

The Type HV instruments combine a standard singlephase HF watt-hour meter with a synchronous motor time-switch—in various switching arrangements—supplied with or without two-rate register. Low cost installation and minimum space requirements make them desirable for metering and controlling off-peak loads.

Modern Meters for Modern Loads

SANGAMO ELECTRIC COMPANY

SPRINGFIELD, ILLINOIS

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ARMORED CABLE • BUILDING WIRE AND FLEXIBLE CORDS • RADIO WIRES •

from start to finish

CRESCENT

performs every operation in the manufacture of
INSULATED WIRE and CABLE



A GROUP OF HEAVY WIRE DRAWING MACHINES IN ONE PART OF THE EXTENSIVE CRESCENT PLANT.

The Crescent Insulated Wire and Cable Company located at Trenton, New Jersey, has been manufacturing insulated wires and cables for electrical use for nearly fifty years. This Company has expanded, added new lines and developed new products, until its plant now occupies over 350,000 square feet of floor space and employs over a thousand people. The high quality of its products is insured by a staff of executives, technical men, and skilled workmen, developed with a background of almost a half century of experience in this one field of manufacture. All Crescent products from the raw material to the finished product are manufactured completely in our plant.

CRESCENT
INSULATED WIRE & CABLE CO. INC.
TRENTON, NEW JERSEY

SERVICE ENTRANCE CABLE • WEATHER PROOF WIRE • LEAD ENCASED CABLES • RUBBER POWER CABLE

BARE WIRE • CRESFLEX NON-METALLIC SHEATHED CABLE • MAGNET WIRE •

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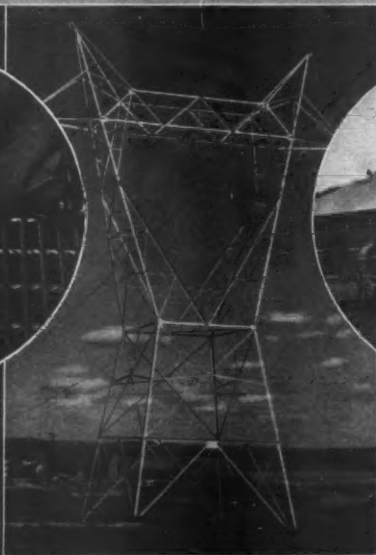
BLAW-KNOX PRODUCTS

for

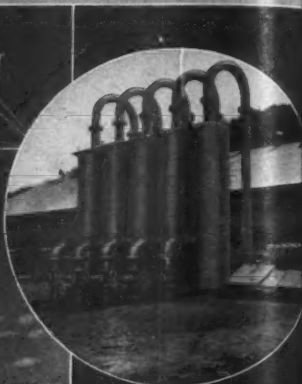
PUBLIC UTILITIES



STEEL GRATING



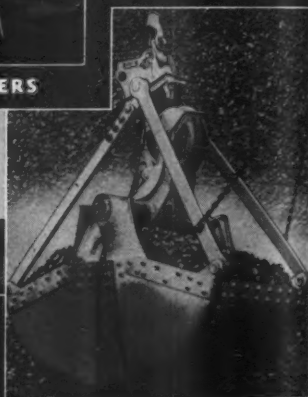
TRANSMISSION TOWERS



GAS CLEANERS



STEEL BUILDINGS



CLAMSHELL BUCKETS

Thousands of miles of transmission towers... structural work necessitating highly specialized fabrication... enormous areas of Electroforged open flooring... standard steel buildings for all uses... gas cleaners for natural gas lines... steel forms for concrete tunnels, walls, etc.,... steam purifiers, desuperheaters... clamshell buckets... and other products of Blaw-Knox manufacture are at work for the Public Utilities of America.

The fact that Blaw-Knox Products are in accord with

the rigid standards of Public Utility purchasing is proof not only of the merit of the products themselves but of the house behind the products.

BLAW-KNOX COMPANY

2057 FARMERS BANK BUILDING, PITTSBURGH, PA.

VARI-TYPER

COMPOSING MACHINE

type instantly interchangeable. • Spacing variable vertical and horizontally. • Carbon paper or cloth ribbons. • Prints Bold Faced Headings.

[No other machine like it at any price. Saves its cost quickly. Essential wherever stencil duplicators or offset photography is employed. Beautiful work. " " " "]

— Write for Demonstration —

RALPH C. COXHEAD CORPORATION

MANUFACTURERS

17 PARK PLACE

NEW YORK, N. Y.

NEW YORK, N. Y.

RAY-O-VAC

Dependable service—long hours of it—on and off—off and on! Utilities put flashlights and batteries to the severest tests, but Ray-O-Vac industrial flashlights and batteries have proven they can take it. That's why each year more and more utilities specify "Ray-O-Vac".



Pictured here, the famous guaranteed foolproof Rotomatic Switch—exclusively a Ray-O-Vac feature.

RAY-O-VAC COMPANY

Formerly FRENCH BATTERY COMPANY

MAIN OFFICES and PLANT—MADISON, WISCONSIN

Additional Factories at Clinton, Massachusetts, Lancaster, Ohio

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Trident

Water Meters *erase*



- Five-ten-thirty years of service . . . you put in new, improved interchangeable parts . . . and *what becomes of deterioration?* That, in a nutshell, is the story of Trident and Lambert Water Meters. From the very beginning, these Quality meters were designed and built on this basic principle of *erasing deterioration through interchangeability*. In these meters, neither time nor change nor improvements have ever made them obsolete . . . nor ever will! When you invest in Trident and Lambert Water Meters the value of your investment remains practically 100% for generations. We make a type for every service. Neptune Meter Co. (Thomson Meter Corp.), 50 W. 50th St. (Rockefeller Center), New York City . . . or Neptune-National Meters, Ltd., Toronto, Canada.



The casing (cut away) of a Trident Frost Proof Meter, dated 1899. Inside, modern, improved, interchangeable parts. Result . . . deterioration erased. The meter will give perfect service as long as the stout casing holds together.

**OVER 6 MILLION TRIDENT
AND LAMBERT METERS**

Made and Sold the World Over





BIRMINGHAM
MAY 1936

ORSON VINCENT
VINTAGE

CROWLEY LAUNDRY, INC.
Master Cleaners and Dyers
PHONE 17
CROWLEY, LA.

March 10, 1936.

Kisco Boiler & Engineering Co.,
4333-35 Duncan Ave.,
St. Louis, Mo.

Gentlemen:

To say that we are satisfied with the Kisco Return-to-Boiler System, purchased several months ago, would be putting it mildly. We are enthused, and the only regret which we can register at this time is that we did not install it sooner.

We are so proud of the performance of the system that we had a photograph taken of it, which you will receive under separate cover. Accept it with our compliments.

Prior to the installation of the Kisco System, we were using a tilt trap and steam pump. Before we installed the Kisco System, our help was constantly complaining because the presses and other units were cold. We used to change the top covers on our presses once a week due to the machines running wet. Since installing the individual traps recommended, our presses are bone dry and we have noticed not only increased production but increased efficiency as well, with everybody satisfied. It formerly took at least three hours in the morning to heat up our equipment. Now, they are ready for operation in less than an hour.

We never realized what the Kisco Return-to-Boiler System would really accomplish. It is the sweetest piece of machinery we have ever used. As we have been extremely busy during the past weeks, we have been unable to check up the figures as to the savings effected in fuel, time, as well as labor, or the increased efficiency effected at the machines. We, however, will have these figures for you later.

We are also going to reclaim the exhaust from our engine. At the present time we are wasting this exhaust and feel that an additional saving will be effected by returning it the Kisco Way.

Thanking you again for the recommendations extended and also for selling us this system, which we consider one of the best investments which we have ever made, we are

Very truly yours,
CROWLEY LAUNDRY, INC.

BY *H. L. L. L.*

Send your dirty "Duds" to "Suds"

- PRESSES RAN COLD
- MACHINES RAN WET
- TOP COVERS CHANGED WEEKLY
- 3 HOURS HEATING UP
- MORALE and PRODUCTION AT LOW EBB

Then-

But Read This Letter Yourself

It is a different story today than the Crowley Laundry, Crowley Louisiana, tell since they discarded their old-fashioned tilt trap and steam pump return system and installed a Kisco Return-to-Boiler System to protect their Gas-Fired Boiler.

The amazing results that a Kisco Return-to-Boiler System bring to the plant operator are hard to realize except through actual experience. You can be guided by the experience of thousands of others who have learned of the superiority of Kisco Systems.

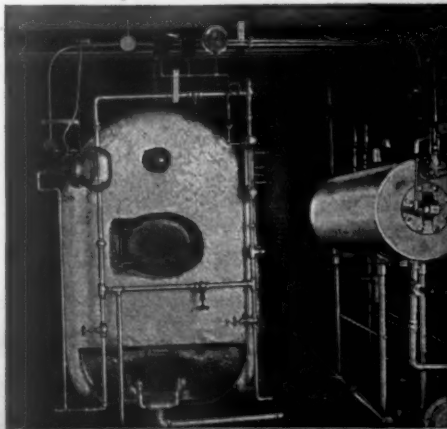
ONLY ONE WAY TO GET KISCO RESULTS

Various types of return systems, sold for years, are being replaced by Kisco Systems. A Kisco installation means up-to-date efficiency and economy with guaranteed results.

Write for bulletin P. U.10-1—and learn why.

KISCO BOILER AND ENGINEERING CO.

4333-35 Duncan Ave., St. Louis, Mo.



Make Use of the Industrial Experience of INTERNATIONAL HARVESTER When There's a Power Problem to be Solved



International Model TA-40 TracTracTor working on the natural gas pipe line laid near Mazon, Ill.

Before long the *Millionth* Tractor of International Harvester manufacture will be coming off the assembly lines and going out to handle somebody's power job. That's by long odds the biggest tractor-production figure in the industry. It is also a measure of our thirty-year experience in this field—experience which will be of value to you when you have a power problem to handle

and need efficiency and economy on the job.

If your work calls for powerful crawler or wheel tractors, small tractors for cramped areas, fixed power units, small engines, motor trucks—call on a Company-owned branch or authorized industrial dealer or the International Harvester sales-service organization.

INTERNATIONAL HARVESTER COMPANY

(Incorporated)

606 So. Michigan Avenue

Chicago, Illinois

INTERNATIONAL HARVESTER

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Check These Four Points of

Superiority of Wagner RURAL LINE DISTRIBUTION TRANSFORMERS



Service lines can be easily connected, since core and coils are fastened to cover and cover may be rotated to any desired position with respect to the pole.

No solder is required for connecting transformers to line—solderless connectors are used for all bushing terminals and grounding lugs.

Transformer is self-protecting against lightning as it is equipped with a co-ordinating gap that is set to flashover at a value well below the surge strength of the transformer windings.

Transformer is shipped filled with oil ready for service. This is made possible by the use of stud-type bushings which eliminate all syphoning of oil.

Wagner type HEB-F rural line distribution transformers meet the need for a small inexpensive unit designed for application to lines of 13200 V volts and below.

Transformers for this class of service are manufactured in the 1- and 3-kva sizes for operation on single-phase, 60-cycle lines where the high-voltage and low-voltage neutrals are interconnected and solidly grounded. All are oil-filled, self-cooled, 55° C. temperature rise. They are obtainable for voltage classes of 2400, 4800, 6900 and 7620 volts with solidly grounded neutral for operation on 4160, 8320, 11950 and 13200 volt lines.

Wagner type HEB-F rural line distribution transformers have not only all these features, but many more. For further information regarding these transformers, write the nearest Wagner branch office. Descriptive literature will be sent upon request.

Wagner Electric Corporation

6400 Plymouth Avenue, Saint Louis, U. S. A.

TD2M-4BA

Transformers

Motors

Fans

Brakes

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Point out to your customers the sure way to MODERN GAS COOKERY

American Gas Association national advertising now tells your customers about MODERN GAS COOKERY... this dial helps you sell it!

Have salesmen point to the dial - have them point out that Robertshaw oven-heat control is the big feature that makes cookery modern.

Accurate control of temperature - perfect control over meat shrinkage - freedom to leave the kitchen - these are the time-saving, work-saving features that women will understand as modern. These are the features that Robertshaw provides.

Sell Robertshaw-equipped ranges. Be sure the dial is marked Robertshaw. Over 16 years of advertising have made that name stand for modern cookery. This year it's the name that helps you sell modern cookery.

ROBERTSHAW THERMOSTAT COMPANY, YOUNGWOOD, PENNA.

OVER 2,600,000 IN USE

ROBERTSHAW

OVEN-HEAT-CONTROL

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GARRISON

The Modern DRY Method of FIRE Extinguishment

BULLETIN NO. 5—for the information of PUBLIC UTILITY EXECUTIVES

UNDERSTANDING IS THE FIRST STEP TOWARD CONTROL OF FIRE

+

We have written a 36-page brochure which will give you that understanding.

+

It contains 25 illustrations of Fires. . . 14 of the
most modern fire-extinguishing appliances
and 3 modern systems for fire-detecting
and automatic fire-extinguishment

+

It describes GARRISON, "the safest and quickest method of
getting oil fires involving electric equipment under control"
(report of a Utility appointed Committee).

+

FREE FOR THE ASKING
*Send for **YOUR** copy today!*



GARRISON ENGINEERING CORPORATION

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GREAT BARRINGTON, MASSACHUSETTS

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

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TAYLOR

COMPLETE COMBUSTION

UNIT

TAYLOR STOKERS

AECO FURNACES

(Water Cooled)

AECO ASH HOPPERS

*Economically
Correct*

AND WE CAN PROVE IT!



AMERICAN ENGINEERING COMPANY
PHILADELPHIA • PENNSYLVANIA



Throw Your Voice to the AUDITOR

Here is a trick . . . and it is not ventriloquism . . . that busy executives are doing dozens of times every day and it saves time, money and nerves.

You merely flick a key and talk. Instantly your voice, *broadcast* through the super-sensitive microphone or *whispered* in privacy through the special hand set, is heard in the Auditor's Dept., Engineering Dept., Operating Dept.—in any part of the organization selected by your forefinger.

Telematic is the name of this ingenious instant system of *intracommunication*. It has no connection with your regular telephone switchboard. Hence it does not stop outside calls or clog inside lines. Telematic provides instant contact between departments for any information required during telephone conversations.

Numbering among the thousands of TELEMATIC users are New York Edison Co., Kansas City Power & Light, Public Service of N. J., Columbus Street Railway Power & Light, and many others. The coupon below makes it easy for you to secure the names of users in your locality so that you can check their experience and satisfaction with Telematic.

Or, if you prefer, check the coupon to indicate that you would like a Hearing-Is-Believing demonstration right in your office. No obligation, of course.

TELEMATIC

DICTOGRAPH PRODUCTS CO. Inc.

580 FIFTH AVE.

NEW YORK CITY

Branches in all Principal Cities

DICTOGRAPH PRODUCTS CO. Dept. PU-1
580 FIFTH AVE., NEW YORK, N. Y.

(Please Check Service Desired)

- ☐ Local Telematic Users
☐ Hearing-Is-Believing Demonstration

Name

Bus. Org.

Address

IMPROVE PUBLIC RELATIONS AT VERY SMALL COST



In the communities you serve adequate street lighting is important to the public—doubly so to merchants whose business may be injured by poorly lighted business districts.

A simple but effective plan to satisfy the demand for improvement is Silver "Multiplex" Processing. Applied to existing equipment, it controls and directs the light rays toward the street—increases effective illumination from 30 to 50 per cent.

Invariably, too, it promotes the business of the community (since people shop more on well lighted streets) . . . encourages better lighted stores and store windows . . . safely and soundly builds the Commercial Load.

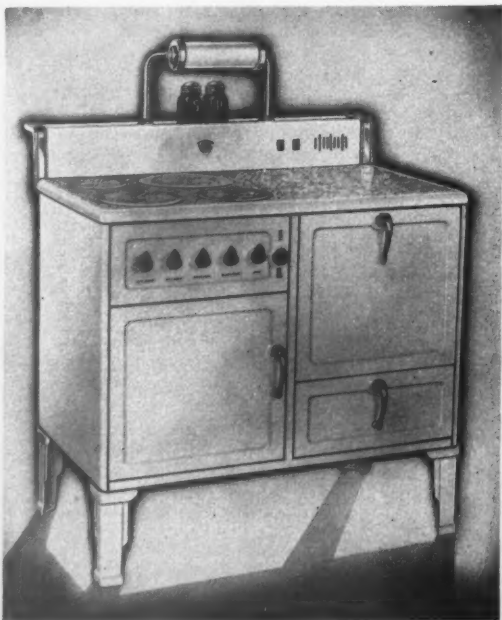
Yet, the cost of processing your lamps is only a very small percentage of the annual street lighting revenue!

May we send you complete information . . . or have one of our Engineers call with reference to a survey or recommendations?

AMERICAN STREET ILLUMINATING COMPANY

"Backed by 58 Years' Street Lighting Experience"

261 NORTH BROAD STREET, PHILADELPHIA, PENNSYLVANIA



L & H
Electric
RANGES

● Striking eye appeal . . . new features that are useful . . . that produce sales response. Get the facts about L&H quality built ranges.



A. J. LINDEMANN & HOVERSON CO.

Milwaukee

Wisconsin

NEW YORK

CHICAGO

SAN FRANCISCO

Designed for Electric Ranges



Triple Thick... Saves Fuel and Food

A beautifully matched set—serves all cooking needs. Prepares food the healthful, waterless way—without waste of fuel or food. Wide, flat bottoms and straight sides result in high thermal efficiency.

Years Ahead in Features

1. Flavo-Seal covers—retain flavor and food value.
2. Heat-resisting bakelite cover knobs.
3. Triple thick aluminum—heats quickly and thoroughly.
4. Dutch oven has trivet.
5. Flat bottoms—snugly fit heating unit.
6. Rounded corners are easy to clean.
7. Rectangular bakelite handles will not turn or loosen—remain cool.

For Electric Range Promotion

This set is the ideal accessory to the electric range. Convenience and economy features create satisfied consumers. Set consists of a 5 quart Dutch Oven, 2, 3 and 4 quart Sauce Pans, and a 10 inch Covered Skillet.

Write for Details!

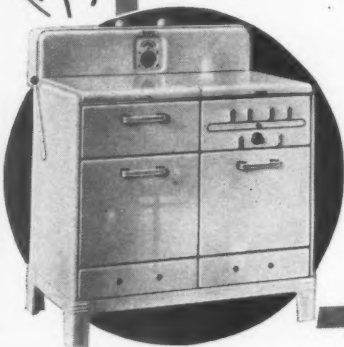
Bulletins and prices with suggested plans for promoting electric range sales will be sent on request!

WEST BEND ALUMINUM COMPANY

Dept. 66

West Bend, Wisconsin

SALES ACTION! WITH THE 1936 ESTATE GAS RANGE



STRIKINGLY beautiful—super-practical—outstanding in sales clinching power . . . That's the 1936 Estate! With Fresh-Air Oven—Leveracks—Waist-High Drawer-Type Broiler—other dramatic new features. No other line of gas ranges can give you so much **SALES ACTION**.

**THE ESTATE STOVE COMPANY
HAMILTON, OHIO**

Reserved for

a

MSA Advertiser

STATEMENT OF OWNERSHIP

Statement of ownership, management, circulation, etc., of Public Utilities Fortnightly, published bi-weekly at Rochester, N. Y.; required by the Act of Congress of August 24, 1912.

Publisher: Public Utilities Reports, Inc., Rochester, N. Y.

Editor: Henry C. Spurr, Rochester, N. Y.

Managing Editor: None.

Business Manager: A. S. Hills, Washington, D. C.

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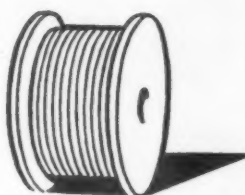
PUBLIC UTILITIES REPORTS, INC.,
Henry C. Spurr, Editor.

Sworn to and subscribed before me this 14th day of September, 1936.

Margaret T. Mahoney,
Notary Public.

(My commission expires March 31, 1937.)

A · C · S · R



Mileage figures are so often disregarded as mere statistics that we believe it more to the point to say that A. C. S. R. is enjoying the same overwhelming preference for rural lines which it has always received in the field of high voltage. Aluminum Company of America, 2134 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA · ALUMINUM



HAYS A GOOD NAME ON BRASS



GOOD products, good service and fair business tactics built a good name, HAYS. Since 1869 we have striven in every way to make folks like to do business with Hays. The name, Hays, impressed on a product is your assurance of first grade quality—it is our mark of responsibility for the good performance of that product thru the years. Our more than 66 years of experience can be at your fingertip. Just write for catalogues on Water and Gas Products and the Hays Copper Plumbing Method.

HAYS MFG. CO.

ERIE, PENN.
SINCE 1869
BRASS for WATER
and GAS

DAVEY LINE CLEARING SERVICE

Falling Leaves Help You

THERE IS MORE to be remembered about falling leaves than that the kids like to tumble in them. Leaves, like clothing hide the limbs, and although there is nothing tremendously exciting about it, a leafless tree is quite revealing. And what does that have to do with a line clearing service?

For one thing the absence of leaves lets you see just what conditions are in the tree tops; where the branches overhang or touch your wires and where the broken or badly decayed branches are located. It lets you see just what needs to be done, and afterward it lets you see whether the job was well done. It enables the men to get your clearance a little more rapidly with quicker and easier brush disposal and better feeling on the part of tree owners who hate to see leafy branches cut from their trees.

Now is a good time for line clearing.

THE DAVEY TREE EXPERT CO.,

Kent, Ohio

DAVEY TREE SURGEONS

PIPE STOPPERS



All Types PIPE LINE SUPPLIES

Goodman Stoppers
Gardner-Goodman Stoppers
Goodman-Peden Stoppers
Goodman Cylindrical Stoppers
Bags—Rubber, Canvas Covered
Plugs, Service & Expansion
Pumps
Masks
Brushes
Tape—Soap & Binding

Catalogue mailed on request.

SAFETY GAS MAIN STOPPER CO.

523 Atlantic Avenue
Brooklyn, New York



FOLD-A-WAY

boosts sales of IRONERS and current (1230 watts per hour)



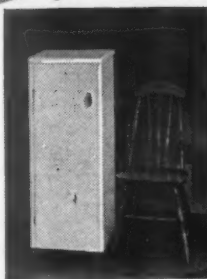
Model 635

Economy of floor space appeals to housewives everywhere

Takes No More Floor Space Than Kitchen Chair

It's easier to sell what the housewife wants and cannot get in any other ironing machine. The Thor Fold-A-Way also gives her all three types of control—knee, foot and finger-tip. This patented space-saving construction gives the Thor dealer a powerful, exclusive merchandising advantage.

With only four per cent saturation, ironers afford a big, unworked field for merchandising profit. Find out how Thor's effective promotional helps and popular-priced rotary line are boosting ironer sales close to those on washers for many aggressive dealers. Send for all the facts today.



Balanced, easy lifting. Shoe pulls up with one finger. Self-locking, rigid, folding leg and table.



Address

E. N. HURLEY, JR., PRESIDENT
HURLEY MACHINE COMPANY
 54th Ave. and Cermak Road, Chicago, Ill.

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